

CHILTON'S

MOTOR AGE

July, 1958



Also in this Issue: ASL Shop of the Month—p. 37; Merchandising Story of the Month—p. 42; Month's Management Story—p. 44; Month's Mechanical Story—p. 46

Since 1903...

**PARTNER
IN PROGRESS to the
AUTOMOTIVE
INDUSTRY**



CHRYSLER—one of the leading engine manufacturers using Perfect Circle piston rings for original equipment.

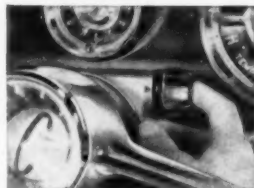
Behind the world-wide acceptance of Perfect Circle is a history of more than half a century of PC engineering leadership—and more. There's a history, too, of unceasing creative research...a constant search for the new and the better...matchless manufacturing skills...and scores of contributions to the forward march of the automotive industry, year after year.

Leading manufacturers specify piston rings developed in cooperation with Perfect Circle engineers. You and your customers benefit with Perfect Circle's achievements in engineering, research and manufacturing skills when you install PC rings. Perfect Circle Corporation, Hagerstown, Ind.; The Perfect Circle Co., Ltd., 888 Don Mills Road, Don Mills, Ontario.

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PISTON RINGS

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a new
dimension
in driving...



Auto-Pilot—a product of Perfect Circle research and engineering—prevents unintentional speeding in city, country and turnpike driving, yet keeps full engine power at your instant command. Lets you keep your eye on the road—and off the speedometer. Provides "robot throttle", permitting restful highway cruising with your foot off the accelerator pedal. Available now on the magnificent 1958 Chrysler and Imperial motor cars. Auto-Pilot is manufactured by the Speedostat Division of Perfect Circle Corporation.

ANOTHER BLUE STREAK
SECRET SERVICE TIP FOR YOU.

SHERLOCK McKANICK and MIKE

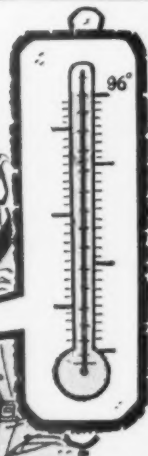
The case of the
'HOT' battery.

SHERLOCK, MISS GLAMARR'S
REGULATOR KEEPS DELIVERING
A HIGH CHARGE! THE BATTERY
IS BRAND NEW AND THE
REGULATOR TEST SHOWS THAT
THAT IT IS SET AT A
NORMAL 7.3 VOLTS.

ELEMENTARY,
MIKE, MY
BOY...



TAKE A LOOK AT
THAT THERMOMETER!



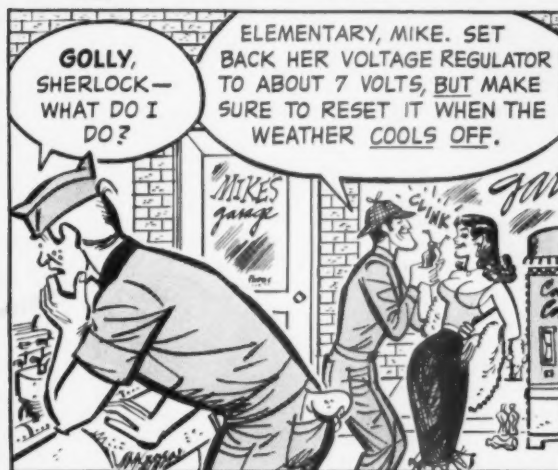
SHERLOCK,
IT'S **BLISTERING**
TODAY! BUT
WHAT'S THAT
GOT TO DO
WITH ...

SIMPLE, MIKE — A HOT
BATTERY OFTEN CAUSES
SERIOUS OVERCHARGING
EVEN AT THE NORMAL 7.3
VOLT REGULATOR SETTING.
THIS IS A PERFECT EXAMPLE!



GOLLY,
SHERLOCK —
WHAT DO I
DO?

ELEMENTARY, MIKE. SET
BACK HER VOLTAGE REGULATOR
TO ABOUT 7 VOLTS, BUT MAKE
SURE TO RESET IT WHEN THE
WEATHER COOLS OFF.



GLOOM!

MY YOU'RE
BRILLIANT
MR. McKANICK!

TO BE
MORE
ACCURATE,
BLUE STREAK
IGNITION SERVICE
BULLETINS
ARE
BRILLIANT!



FREE — WRITE FOR BLUE STREAK BULLETIN
No. 77-54, "SERVICING VOLTAGE REGULATORS,"
TO: STANDARD MOTOR PRODUCTS, INC.,
37-18 NORTHERN BLVD., LONG ISLAND CITY 1, N.Y.
(Become a **BLUE STREAK** registered dealer and
get the complete file.)

BYE,
CUTIE!

AW-W, **NUTS!**
THAT GUY HAS
ALL THE LUCK!

NO WONDER
40,000 ALERT
DEALERS SAY,
BLUE STREAK
IGNITION IS BETTER
FOR YOUR BUSINESS!

WORLD'S FOREMOST
HEAVY-DUTY
IGNITION LINE

BLUE STREAK

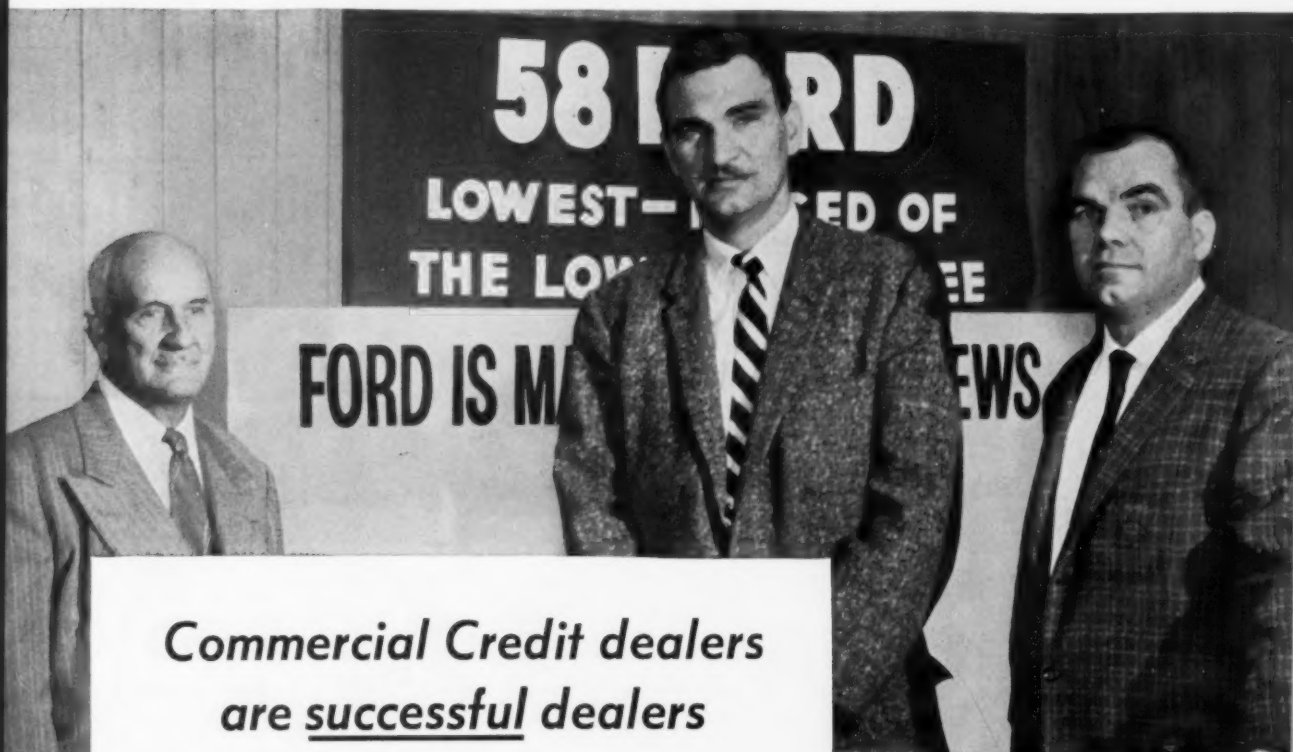
REGULATORS • SWITCHES • COILS • CONDENSERS • CONTACT POINTS • WIRE AND CABLE

"...helps us be fully competitive..."

say J. E., R. L. and W. H. Anderson of ANDERSON BROS. MOTORS, Ford dealer, Berwyn, Illinois

"With as many dealers as we have around the Chicago Metropolitan Area you've got to be on your toes to get your share of sales. COMMERCIAL CREDIT's alert and aggressive attitude helps us be fully competitive in every segment of our market. That's why we've used COMMERCIAL CREDIT and have most of the thirty-five years we've been

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A service offered through subsidiaries of the Commercial Credit Company, Baltimore . . . Capital and Surplus over \$200,000,000 . . . offices in principal cities of the United States and Canada.

TAKES ONLY 20x25-inch WALL SPACE



Order by these numbers:
No. JV137G for gasket
assortment only without
board. 24 numbers—
in separate boxes—260
pieces total.
No. JV147A for com-
panion display board
and hooks only.

New **VICTOR** water outlet gasket assortment board now ready

Holds 24 different numbers... all current... 260 pieces

In this small space on your shop wall, you can have 99% of the gaskets needed for water outlets, thermostat housings, thermostats and water by-passes.

Think of the shop time you would save by having these important gaskets always handy. No more searching for them in boxes. This new gasket assortment covers all popular car makes—1958 models included.

The gaskets hang on hooks—each number in its own place—over permanently printed identification on the board. The identification shows the pattern, gives the make and models each is used for, and the Victor stock number. This identification makes for real convenience in getting the right "refills" and putting them on the right hooks. Avoids mistakes on jobs, too!

The board is sturdy hardboard, and comes ready to be put on the wall. It's drilled for the 24 chrome-plated gasket hooks that come with it. It's up and working for you in minutes. Why not reserve your assortment now—call your Victor Jobber.

Victor Mfg. & Gasket Co., P.O. Box 1333, Chicago 90, Ill. Canadian Plant: St. Thomas, Ont.




Smaller assortment, gaskets only,
also available: No. JV138C —
12 varieties — 120 pieces total.
(Display board not supplied for
this assortment.)

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Sealing Products Exclusively

GASKETS • OIL SEALS • PACKINGS

The 100% Coverage Line—for Cars, Trucks, Tractors, Stationary Engines



The New K. O. Lee Valve Guide Reaming Sets

Designed to service late model engines which have valve guides cast as part of the cylinder head. In this new type head, it is the valve which has to be replaced. This is accomplished by reaming out the valve guide for oversize stem valves. Most of the engine and valve manufacturers now offer at least three sizes of oversize valves.

The Lee Reamer Guide provides a true alignment with original guide bore using Lee Self-expanding pilots. The reamer is held rigid with reaming bushing during reaming operation. Simple to operate and extremely accurate.

Special sets available to service Ford, Mercury, Lincoln, Chevrolet, Plymouth, Dodge, DeSoto, Chrysler.

R55 Reseater Power Drive adapts to these valve guide reaming sets.

Clip ad to your letterhead and send for Literature.

K. O. Lee Company, Aberdeen, S. D.

for
**LONGER
MUFFLER
LIFE.....**

**HEAVY
TWIN
SHELL**

HAVILAND



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For longer muffler life, the shell is important, and THERMO FLO'S heavy twin shell serves best because of its extra heavy construction. The outer shell is full 20 gauge... as heavy as found in old type single shell mufflers; to this, Haviland engineers have added a long wear - sound deadening inner shell.

Long wear is also assured by the revolutionary new THERMO FLO "instant heat distribution" that minimizes condensation which is the cause of internal muffler wear.

Write today for the full inside and outside story on Haviland THERMO FLO mufflers.

**MORE THAN A QUARTER CENTURY
OF MUFFLER MANUFACTURING PROGRESS.**

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CHILTON'S MOTOR AGE

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JULY, 1958

Vol. 77, No. 8

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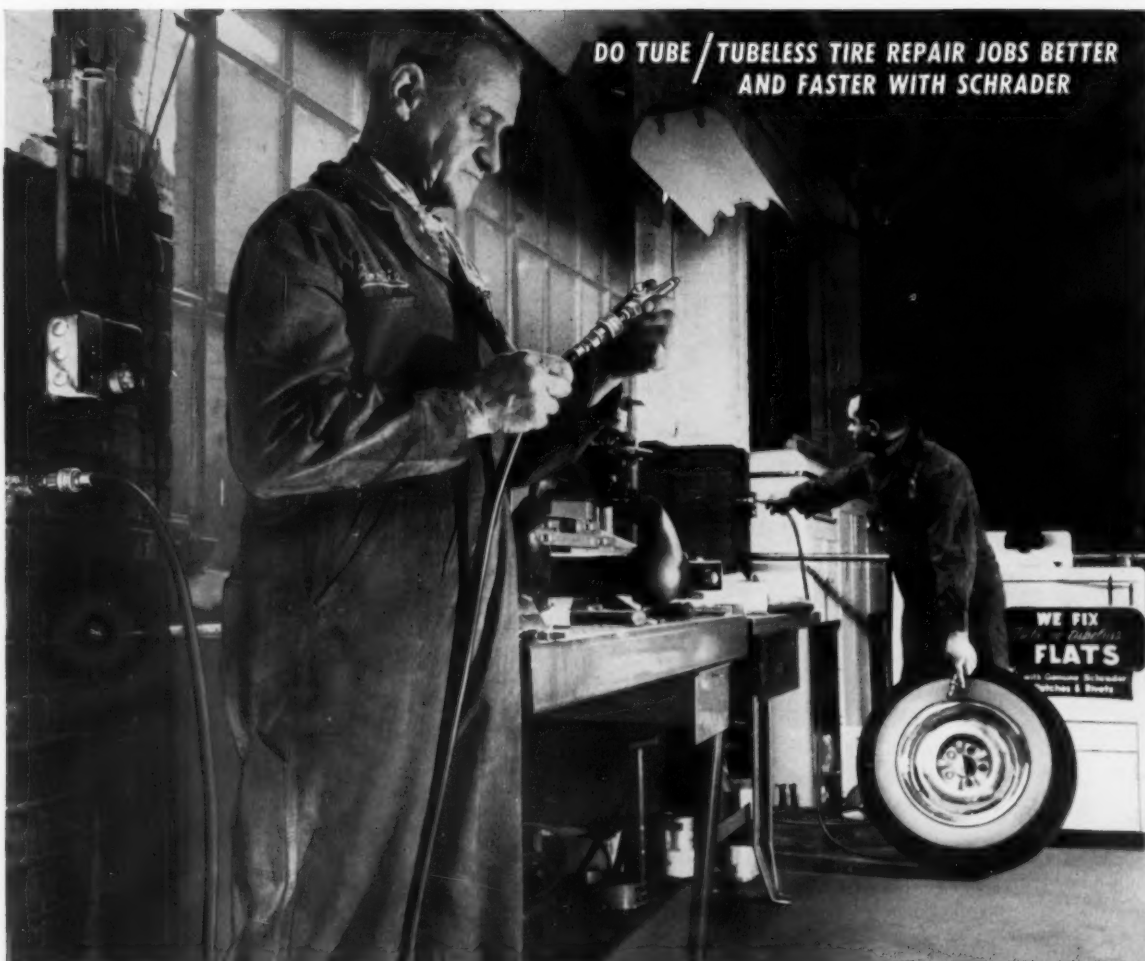
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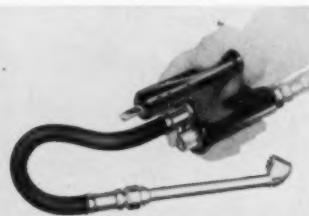
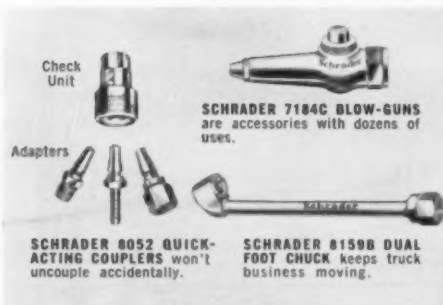
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FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Chilton's MOTOR AGE, JULY, 1958



MOTOR AGE MEMO

To Provide You With a Package of Profit!

YOU receive this magazine every month and it is our fervent belief that it serves you as a work shop tool. Beyond that we, the editors of Motor Age, want to expand our editorial purpose . . . providing you with a *package of profit*.

Six months ago Motor Age announced the establishment of the Automotive Service League. The league is not a club nor a trade association. It is a league of business men qualified to serve the motoring public . . . to display the ASL certificate . . . to participate in the benefits of special articles as shown in this issue.

Automotive Service League members want to succeed. They want to grow. They read Motor Age to help them to make an honest buck. This magazine feels that it is doing something important for its readers.

This month's *package of profit* begins on page 37 with the Shop of the Month. There follows the Merchandising story of the Month, the Management story of the Month and the Mechanical story of the Month. The Merchandising Calendar for August is enlarged to help you use it more effectively.

The Five Point Plan

Mr. Herbert I. Segal, president of Van Norman Industries Inc. has submitted to the President of the United States and to Members of Congress "The Five Point Plan To Curb The Recession." The plan makes a lot of sense to us and we'd like to high spot some of its contents.

The five points include the following:

1. Home Owners Repair Program.
2. Personal Automotive Repair Program.
3. Capital Goods Incentive Program.
4. Commercial and Apartment Building Repair Program.
5. Excise Tax Reduction Program.

The Automotive Repair Program would permit owners to have their personal cars repaired and to deduct this cost from taxable income to the extent of a small percentage of the original cost of the car.


Mr. Segal, who backs up each program with what he describes as beneficial results, point out that The Automotive Repair program would provide immediate increased repair business and would help producers of tools and repair parts. He adds that the cost to government in lost taxes would be offset to a major extent by the benefits that the government would obtain from increased taxes generated by new business.


In his point No. 5, Mr. Segal proposes a program of reduced excise taxes on automobiles, automobile accessories, appliances and other durable goods including television and radio sets, pleasure boats, typewriters and so forth.

Faithfully yours,

Frank P. Tighe

McQUAY-NORRIS makes the most *Power-Packed* rings in the world







The Famous "400" Oil Ring
with Chrome Armored Rails

...and the Famous
"400" Oil Ring
is in every set...

by actual comparison
the "400" Oil Ring
will outperform any other
oil ring made today.




The Duo Oil-Compression
Ring with Chrome Armored
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The Famous Torsion-Tight
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LEAK-PROOF.
PISTON RINGS

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**Give customers
this hot weather
protection**



CHECK THE BELTS

Increased driving in hot weather increases chances of belt failure. To protect owners of modern cars from belt trouble on the road...overheating, loss of power steering or failure of air conditioner...check the belts.

Customers appreciate this service—and you profit also from the multiple belt replacements modern cars require.

Replace weak, worn belts with Gates Vulco V-Belts

Your customer recognizes and respects the name. Your interest in saving him both driving troubles and money will convince him that he has come to *the right shop, the right mechanic.*

Furthermore, there is a Gates V-Belt engineered specifically for every make and model car. Gates V-Belts fit right and save you installation time. *And remember there is a nice profit for you in every belt you sell.*

To find belt wear always turn belt over

The underside of the belt, not the top, tells the true condition of the belt.

REPLACE BELTS LIKE THESE:



CRACKED



GREASY



GLAZED



PEELING



SPLIT



Phone for V-Belt Display Rack

A display rack of Gates V-Belts, supplied by your Gates jobber, puts the right belt for all popular makes at your fingertips. Start today, adding to profits, by checking the belts. For your display rack, phone your Gates Jobber. The Gates Rubber Co., Denver, Colorado—
World's Largest Maker of V-Belts.




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SENSIBLE • HONEST • DEPENDABLE...and ECONOMICAL

Volkswagen Light Trucks have all these virtues...outstanding gas economy...air-cooled engine...no radiator problems...sturdy construction that takes the bumps of rough terrain. Volkswagen has unusual visibility and ease of driving and parking. The Volkswagen Panel Delivery gives you a whopping big 170 cu. ft. capacity, every inch usable and accessible. It loads from wide

side doors, as well as the rear loading door. Top and sides...front and rear give you a bonus in free space for distinctive advertising. But above all, remember: *a Volkswagen costs less to buy, run and maintain.* This we can prove! Sales and Service in 48 states. Look for the Authorized Volkswagen Dealer with this  emblem. **VOLKSWAGEN DELIVERS THE GOODS...FOR LESS!**

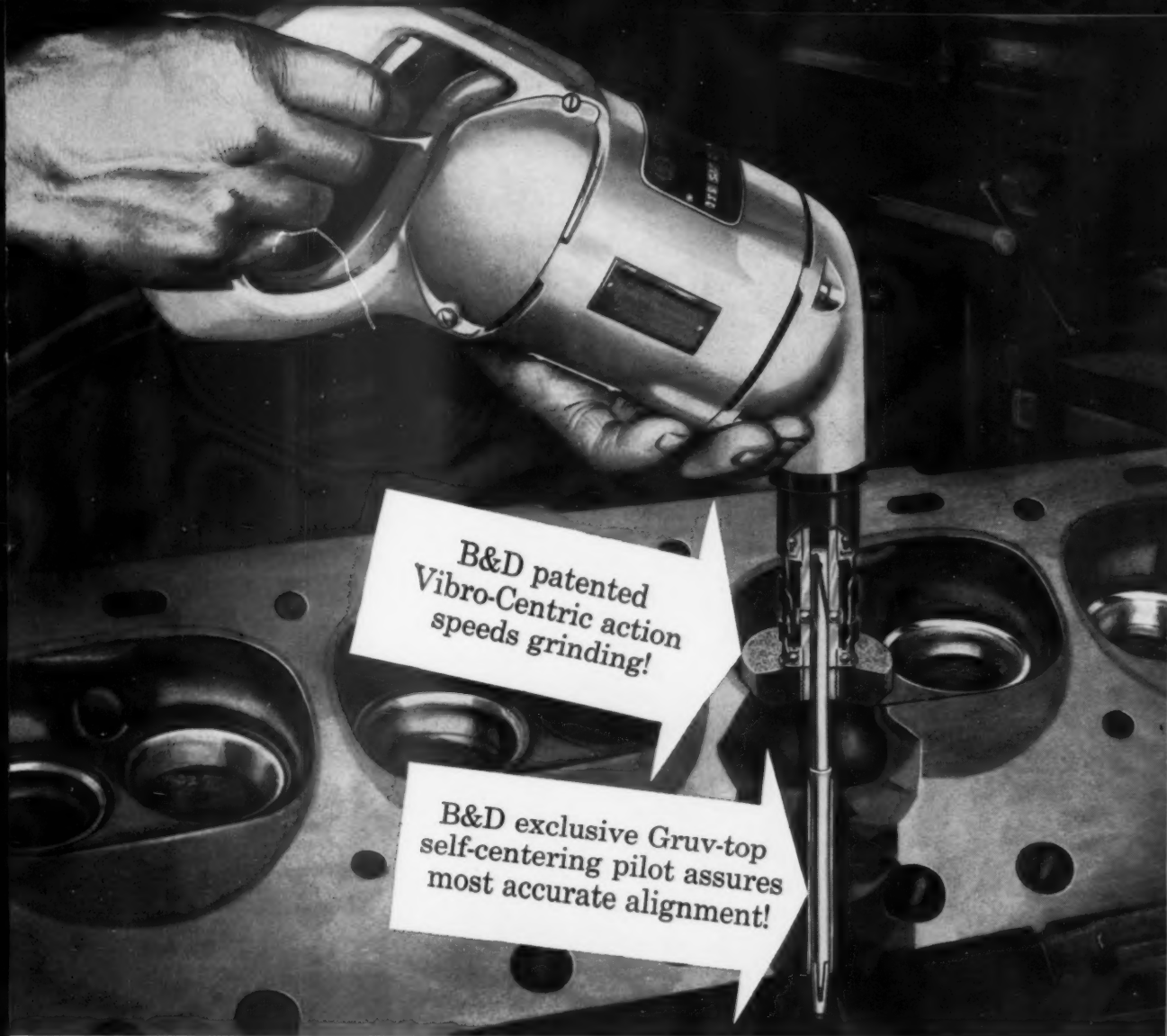


PICK-UP—1764-lb. payload...45 sq. ft. floor area plus 20 sq. ft. in a lockable weather-tight compartment underneath. Sides and back drop down for easy loading.



KOMBI—Virtually two cars in one. It converts into a comfortable station wagon in minutes...just by putting the seats back in.

VOLKSWAGEN



B&D patented
Vibro-Centric action
speeds grinding!

B&D exclusive Gruv-top
self-centering pilot assures
most accurate alignment!

Mirror-finish valve seats in seconds with B&D Vibro-Centric System

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grinding. The entire circumference of the seat is ground for correct alignment! And B&D's exclusive Gruv-top pilot is self-centering; compensates for worn valve guides! See the Black & Decker Vibro-Centric System in your own shop.

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Leading Distributors Everywhere Sell



Black & Decker®

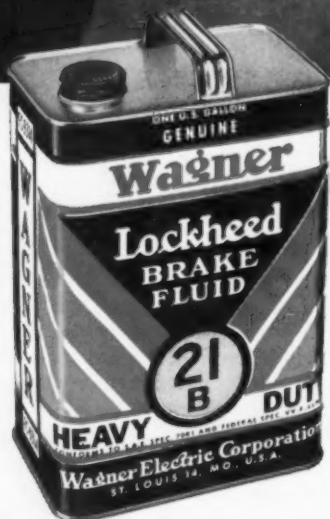
Quality Electric Tools... Power-built for top performance

Prices slashed on easy cleaning B&D NYLON Valve Guide Cleaners

Tough bristled B&D Valve Guide Cleaners reduce time lost in cleaning chores. Remove carbon and other deposits rapidly, thoroughly. Never mar or scratch! In actual test they resist wear even after 50 hours of continuous operation. 10 sizes—all designed to speed work—save you time! Ideal for other cleaning jobs, too.



SAFE BRAKES



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...your action today might save the life of
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FILL BRAKE SYSTEMS with

the same top-quality fluid that you would
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WAGNER LOCKHEED

is a safe brake fluid. It is America's leading
brand.

Wagner Lockheed

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Check the brake system of every car you service...If fluid is needed, supply

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there's none better...none safer

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For safety's sake, standardize on Wagner Lockheed—America's leading brand of brake fluid. It has correct chemical balance...surpasses S.A.E. specifications.

WAGNER LOCKHEED HAS THESE FEATURES:

- Chemically balanced—so that it maintains high operating temperature characteristics, yet functions in sub-zero temperatures.

- Every batch made is chemically analyzed.
- Does not cause cups or hose to swell.
- Forms no gummy residue.
- Does not evaporate rapidly.
- Used by vehicle manufacturers.
- Nationally advertised in POST....Has consumer acceptance.
- Packaged in 12 oz., quart, gallon, 5, 30 and 54 gallon containers.

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ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

Chilton's MOTOR AGE, JULY, 1958

WF58-6

Wagner Electric Corporation

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“This one will last, lady . . . it’s a MERIT!”

There are plenty of good reasons why you can say that to your customers. Merit oval mufflers have $\frac{1}{8}$ heavier Cushion-Aire® shells, up to $\frac{3}{4}$ heavier outer heads, heavier inner parts for greater strength. These, plus new Anti-Rust design, give Merits much longer life. They offer maximum silencing and maximum power, too. And all this easy-to-show quality costs no more.

Merit is a complete line from glass-packed mufflers to heavy service truck systems. *No need to pass up any muffler work when you sell the Merit line.*

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MUFFLERS AND PIPES

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PYRO®

**The top quality anti-freeze
is EASIER to sell**

The Aristocrat of Anti-Freeze

Selling is easy when you use Pyro's new approach to anti-freeze sales. Tie in with Pyro's coast-to-coast advertising campaign promoting Pyro as the "aristocrat of anti-freeze" and you'll increase your anti-freeze sales this year. Call your jobber for Pyro Anti-Freeze today!

Free Tie-Ins identify you with PYRO'S national advertising . . .

National Radio makes 35,000,000 impressions over 200 radio stations.

Direct Mail ties you in with national campaign and tells the quality story.

Point-of-Purchase streamers, banners and die-cut crowns identify you as a Pyro dealer.

Jumbo Lapel Pins button up increased PYRO Anti-Freeze sales.

Super PYRO® and Permanent PYRO® are trademarks

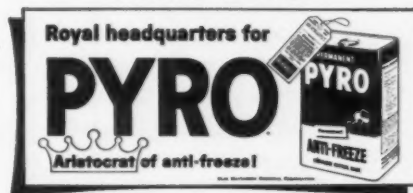


ENVELOPE
STUFFERS

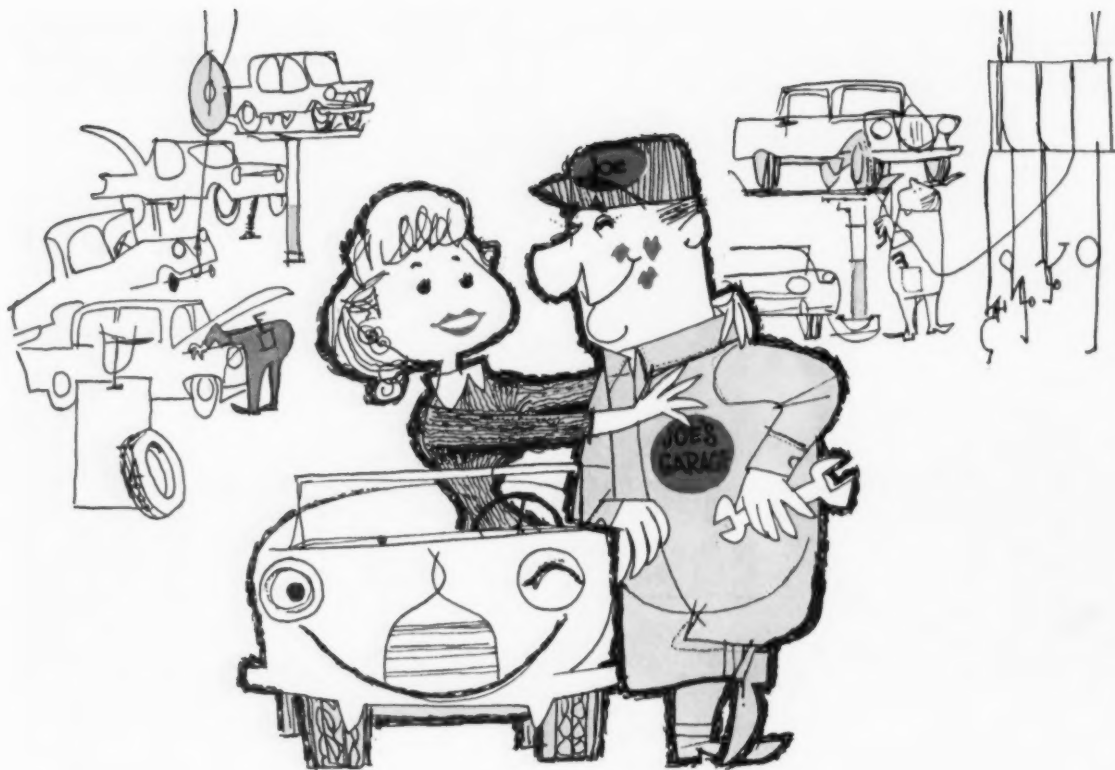
BUTTONS



STREAMERS



OLIN MATHIESON CHEMICAL CORPORATION
Automotive Products Department • Baltimore 3, Maryland



*Joe sure has
a way with
cars*

*with customers too...
Joe uses Timken®
bearings for
replacement!*

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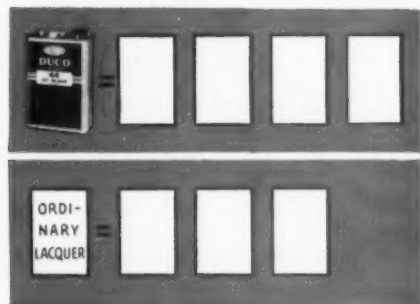
CUSTOMERS LOVE YOU WHEN YOU REPLACE WITH AMERICA'S BEST-KNOWN BEARING...JUST TELL 'EM IT'S...

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

Chilton's MOTOR AGE, JULY, 1958



Extra-black Du Pont blacks end matching problems ... *trouble-free handling cuts job costs*



"DUCO" JET BLACK LACQUER reduces 3 to 1—so one gallon gives *four* at the gun, compared with three for ordinary lacquer. And "Duco" is the blackest, glossiest lacquer you can get!

Here are blacks so black they end matching problems . . . so well made they solve spraying problems!

DUCO® Jet Black Lacquer dries extra-fast—lets you compound over-all jobs in four hours, touch-ups in two. And because of its high initial gloss, it needs less compounding . . . saves man-hours.

DULUX® Black Enamel is a beautiful heavy-duty finish that's ideal for hot-weather use because it is wrinkle-resistant. Even on humid days "Dulux" flows out freely and dries quickly to a bright wrinkle-free gloss.

So for real economy and top quality in enamel as well as lacquer, use Du Pont blacks—"Duco" Jet Black Lacquer . . . "Dulux" Black Enamel.

Du Pont Refinishing Materials

chemically engineered to do the job better

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



"YOU...and carburetor servicemen everywhere...asked for a low cost kit that will do a *complete overhaul* job!"

...a finding shown by Carter's recent national survey of automotive mechanics.



**Now...from Carter...
here it is**

The Re-carburetion Kit—
with all the essentials in one
package to do a complete
carburetor overhaul job.

- *not a cleanout kit*
- *not a "short" kit*

**"Frills out...
essentials in"**

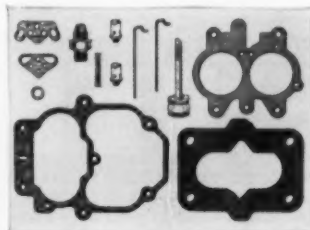
Contents of a typical genuine
Carter Power Center Re-carbu-
retion Kit!

- 6 gaskets
- 1 pump plunger assembly
- 1 spring
- 2 main metering jets
- 2 step-up rods
- 1 needle and seat assembly

Carter's survey indicated a pressing need for a low cost kit that would do the complete re-carburetion job. Such a kit called for a parts package that would include the necessary metering components and all other essentials required in general carburetor overhauls...but no "frills."

This is exactly what the new Carter Power Center Re-carburetion Kit offers you today!

In producing this handy, low cost re-carburetion kit, Carter has streamlined the contents of its repair parts package. There are no leftover parts or excessive inventory. Now the new kit contains only the parts that are absolutely essential for most carburetor jobs in any shop at any mileage.



Gone are the days when you had to chase around the shop after separate parts. Now...all in one convenient package...the Carter Power Center Re-carburetion Kit does the complete job quickly...economically...and at a good profit to you.

Contact your Carter Supplier today.

CARTER CARBURETOR

DIVISION OF QCC INDUSTRIES
INCORPORATED
ST. LOUIS 7, MISSOURI



Give Your Customers the Extra Safety and Wear Top Race Drivers Get with Grey-Rock

At racing speeds, brakes really take a beating. That's why top race drivers use Grey-Rock brake lining. In the world's biggest stock car race last year, the NASCAR® "Southern 500," the first five drivers to finish had Grey-Rock linings on their cars.

To give your customers the same fast, safe stops—plus long wear—Grey-Rock combines many lining types, including woven and molded, into sets specially balanced for each make and model. You'll find this advantage only in Grey-Rock.

In the "Southern 500," world's biggest stock car race, the cars that finished 1-2-3-4-5 used Grey-Rock brake lining. Speedy Thompson, winner, says, "I need a tough brake lining in a fast race. I hit that pedal hard going into the turns, and the lining has to take it without fade or I can't win. Grey-Rock's the best—you can't get any better. I use it on my family car, too!" Brake linings tough enough for experts like Speedy are the best you can give your customers.

And it makes a difference you can *see, show* and *sell* to your customers when you P-L-S the Grey-Rock way.

Car owners will welcome a P-L-S inspection. Pull a wheel, Look at the brakes, Show them what's needed. Grey-Rock Balanced Brake Lining, plus the P-L-S Plan, can get you more brake business and brake profits right through the year. Ask your jobber for the complete Grey-Rock P-L-S Plan, or write direct to us.

*National Association for Stock Car Auto Racing



Advertised regularly in

The Saturday Evening
POST

Ask your jobber about a Grey-Rock Brake Service Clinic. It's the best way to keep up to date on how to handle brake problems.

Only **Grey-Rock** *makes*

BALANCED BRAKES — TRUCKSETS — BRAKE BLOCKS — VEE-LOK® CLUTCH FACINGS

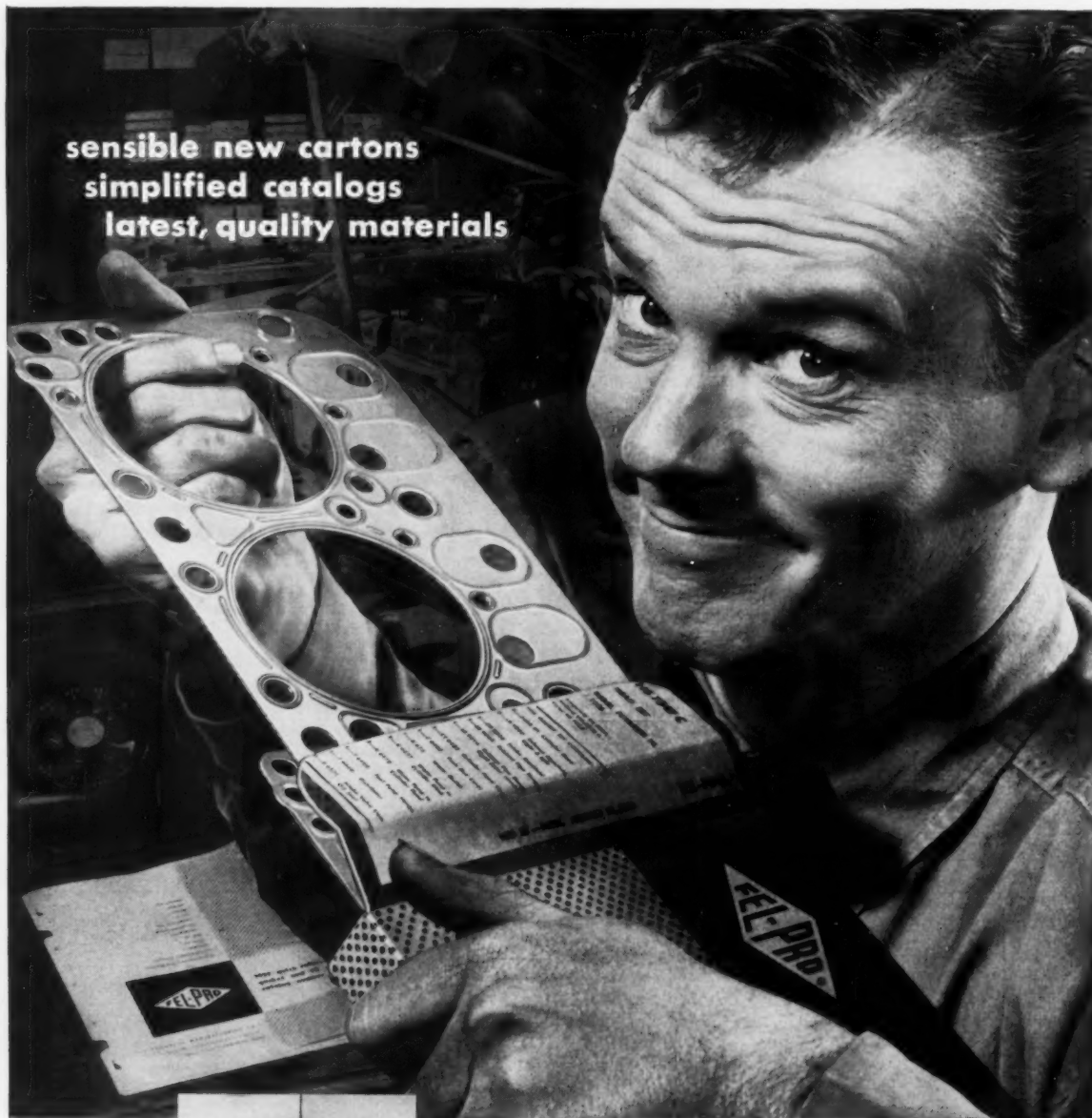
GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., Manheim, Pa.



RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Clutch Facings • Mechanical Packings • Asbestos Textiles
Industrial Rubber • Sintered Metal Products • Engineered Plastics • Rubber Covered Equipment • Abrasive and Diamond Wheels
Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

FEL-PRO GASKETS

UP-TO-DATE where it counts!



at your
Jobber's,
look for this
**DIAMOND
of QUALITY**



To keep your service up-to-date, you must have replacement parts that are up-to-date—and that goes for gaskets. Because gaskets tend to be taken for granted with a "they're all alike" attitude, we strive to make the Fel-Pro Gasket line *different...better...up-to-date* where it counts. New cartons, labeled for quick identification, squared off to stack neatly. Simplified catalogs, mechanic-designed to cut looking-up time. And, gaskets that fit better, seal better, because they use the latest mechanical and chemical developments. Why not start now to keep your gasketing up-to-date? See your Fel-Pro Jobber.

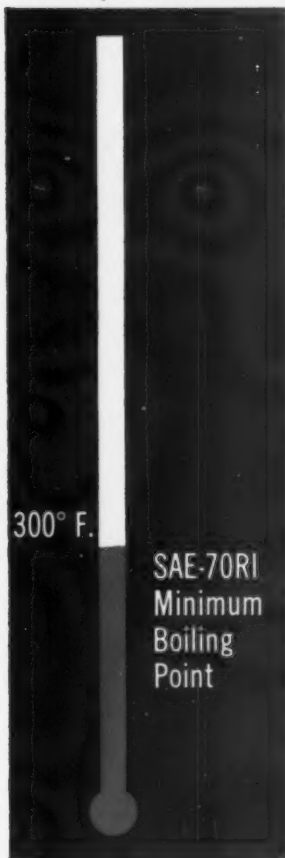
**FEL PRODUCTS MFG. CO., 7464 N. McCORMICK
Blvd., P. O. Box 8609, CHICAGO 80, ILLINOIS.**

NEW DELCO SUPER 99

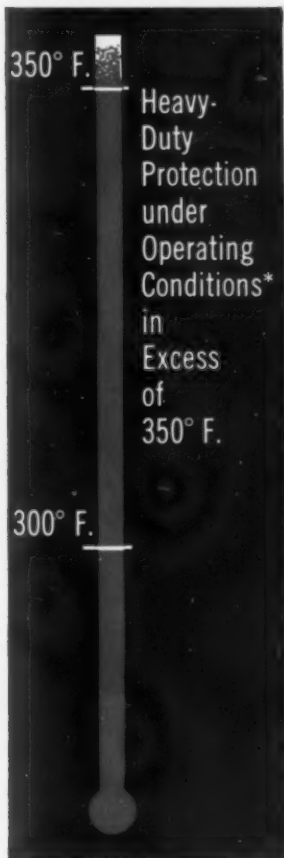
delivers heavy-duty protection at economy prices!

SEE FOR YOURSELF!

SAE specifications



DELCO SUPER 99



The boiling point is *high*—the price is *low*! New Delco Super 99 flows freely at minus 60° F. for extra cold weather safety. It's chemically and physically stable, compatible with all brake system parts (rubber or metal) as well as with other quality brake fluids.

More volume means more profits, so stock new Delco Super 99 today. Order it through the United Motors System, or your nearest Chevrolet warehouse.

*In wheel cylinders under normal static pressures.



For safety's sake sell the best... Sell Delco



Chilton's MOTOR AGE, JULY, 1958



Moraine Products

Division of General Motors, Dayton, Ohio

PEAK[®] anti-freeze

with RUST-GUARD

for guaranteed all-winter protection

We believe you want *the best* for your customers. That's why CSC developed PEAK with RUST-GUARD. RUST-GUARD is what we call the exclusive combination (pat. pending) of special additives that give *all* the metals in the cooling system the *most* effective protection obtainable against both rust and corrosion. And there's no oily film to cut down on heat transfer and clog the radiator.

These are facts, proved by rigid testing in the laboratory and on the road. PEAK is the finest quality permanent-type anti-freeze money can buy. It won't boil away, won't evaporate, doesn't foam, won't leak from any cooling system tight

enough to hold water, won't mar car finish. No other nationally advertised brand contains higher quality ethylene glycol than PEAK. And because of RUST-GUARD, PEAK gives the most effective protection obtainable against rust and corrosion.

For top winterizing jobs this season, install PEAK . . . it's a GUARANTEED product! Order from your sup-

plier now. He will give a 6½ cents per gallon allowance on all PEAK deliveries made before Oct. 26, 1958. This is given to you so that you can offer car owners your own GUARANTEED PROTECTION program — replacement of anti-freeze if lost. Ask your supplier for further details or write Automotive Chemicals Dept., Commercial Solvents Corporation, 260 Madison Ave., New York 16, N. Y.

FLASH! Watch for news about this year's EXPERT DEALER program and the GUARANTEED ANTI-FREEZE PROTECTION plan. It's a combination that's sure to boost your anti-freeze and TBA sales!



"The MoPar line has helped us grow to \$128,000 gross, in four years"

—C. B. Cardwell, Cardwell's Auto Service,
Independent Service Garage, Oklahoma City



"We really started 'below zero' in 1954—with a loan—as a two-man operation. Today we've got a staff of five full-time mechanics, and a parts volume of \$60,000. How have we built it? On quality. The kind of quality you get with Chrysler precision engineering and factory inspection.



"One important thing, I sell my customers on MoPar. I've taught them to expect nothing less than the guaranteed performance of MoPar parts. I've always figured that if repairs aren't satisfactory, you'll hear from an angry customer—or worse, not hear from him. My customers are happy, and steady.



"To keep it that way, I always use official, authentic Chrysler Corporation parts for Chrysler Corporation cars—and you can be sure I use them wherever else I can, too. A lot of the parts that I handle are exclusively MoPar—MoPar filters, batteries, brake fluid, sealed-beam headlights, just to name a few.

sell the line that keeps your customers sold on you—MoPar



"This is one of my 'regulars' with me now—Mr. G. E. Barnhart, a Chrysler owner. He says he trades with me for the same reason he goes to the same doctor all the time—confidence. That kind of customer confidence has increased my business about 50% a year, every year since I started."



MoPar Division
Chrysler Motors Corporation
Detroit 31, Michigan

Look at the NEW TIME FOR CARBURETOR OVERHAUL!

● The following figures, courtesy of Carter Carburetor Corporation, show time study figures for carburetor overhaul using automatic screwdrivers and latest service procedures. Operations . . . disassemble, clean (includes brushing time only—not full soaking time), inspection (routine type). Install recarburetion kit, assemble, adjustments.

MODEL	TYPE	PREVIOUS TIME (ALSO CAR MFR. APPROX. FLAT RATE TIME)	NEW TIME
BBS-2063SA	Single Auto/Choke	1 hr. 15 min.	45 min.
BB-D6H2	Single Separate/Choke	1 hr.	30 min.
BB-E7J4	Single Kickdown and slow closer	1 hr. 15 min.	45 min.
BB-E9A1	Single Kickdown slow closer auto/choke	1 hr. 30 min.	50 min.
AS-2580S	Single Auto/Choke	1 hr. 15 min.	50 min.
YF-938S	Single Hand/Choke	1 hr.	30 min.
WGD-2231S	Dual Auto/Choke	2 hrs.	50 min.
BBD-2637S	Dual 1½" Separate/Choke	2 hrs.	45 min.
WCFB-2593S	4 B	2½ hrs.	1 hr. 15 min.



BUY
A....



Electric Screwdriver!

The **SIoux** Angle Screwdriver pays for itself in a hurry in carburetor and fuel pump overhaul. It quickly drives or removes screws of all types. Similar savings are realized in body work, in seatcover, convertible-top, trim shops, in fact anywhere screws are used.

The No. 243 Set shown includes the All-Angle Screwdriver, slotted screw bits, hex sockets, Phillips bits, ¼" drill chuck and adaptor, high speed drills, and metal carrying case.

The exclusive **SIoux** All-Angle design permits work in spots you just can't get into with conventional tools.



ALBERTSON & CO., INC.

SIoux CITY, IOWA, U. S. A.

NEW AIR IMPACT WRENCHES • NEW AIR SCREWDRIVERS • NEW "PELICAN" NUT ACCUMULATORS
• ELECTRIC IMPACT WRENCHES • DRILLS • GRINDERS • SANDERS • POLISHERS • VALVE FACE
GRINDING MACHINES • SCREWDRIVERS • PORTABLE SAWS • FLEXIBLE SHAFTS • ABRASIVE DISCS



Why carry a large auto glass inventory when you don't have to ?

There's absolutely no need for it. Not when you can take advantage of PPG's quick delivery service on Auto Safety Glass. Twenty-four hours' notice is normally all the time we need to deliver any kind of replacement auto glass . . . for any popular make of car or truck.

So why waste your time and money? Why crowd your storage space . . . or do a lot of unnecessary glass handling? PPG's fast, reliable delivery is certain to satisfy both you and your customers.

These PPG Auto Glass Products are available to

you: Safety DUPLATE® Twin-Wrap Windshields, Safety DUPLATE and DUOLITE® Laminated Glass, and Tempered HERCULITE® Safety Glass. Most of these quality products are made in clear, SOLEX® or SUNSHADE® SOLEX. Your nearest PPG Branch or Distributor will be happy to act as your source of supply. Pittsburgh Plate Glass Company, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

All PPG Automotive Safety Glass complies with every recognized safety code.



SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS
PITTSBURGH PLATE GLASS COMPANY
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

TEXACO

ANNOUNCES

THE BIGGEST NATIONAL PETROLEUM ADVERTISEMENT OF ALL TIME!

Only TEXACO gives its Dealers money-making promotions like this!



For the first time—10 consecutive full-color pages in one issue of Look! Also, full-color, 2-page spreads in Life, Saturday Evening Post and American Legion. The greatest summer promotion ever... with a FREE TOURING BOOKLET offer to draw tourists into Texaco stations!

This is an example of the aggressive promotion that gives Texaco Dealers a terrific edge over competition. No other oil company has ever offered its dealers such a powerful *selling* promotion, tied in with *point-of-sale* selling aids, to help dealers get a bigger share of the profitable touring business! Now in full swing, it is influencing millions of tourists in all 48 states as they hit the road.

NEVER BEFORE A BOOKLET LIKE THIS! It's loaded with information tourists want. It sells Texaco Dealers, their products and services. It brings tourists to Texaco Dealers.

ANOTHER FIRST! Texaco's Touring Booklet is bound into the pages of Look Magazine!

BILLBOARDS! Thousands of colorful posters in all 48 states, backing up the magazine ads!

TV AND RADIO! Thousands of TV and radio spots, reaching millions of motorists!

WINDOW STREAMERS! Gay and colorful, selling at Texaco Dealers' stations.

BOOKLET DISPENSER! Every dealer gets a dispenser containing a supply of the booklets. The national advertising tells motorists to get their copy from Texaco Dealers. *Another* magnet to attract new business!

No wonder Texaco Dealers are such busy Dealers!

A SOLID FUTURE is one of the advantages of being a Texaco Distributor or a Texaco Dealer. Proof: 683 of our Distributors have been with us for 20 years or more, 20,096 Texaco Dealers 10 years or more. There may be an opportunity for you in the Texaco family. Get in touch with the Texaco Division Office nearest you.

DIVISION OFFICES: Atlanta, Ga.; Boston 16, Mass.; Buffalo 9, N. Y.; Butte, Mont.; Chicago 4, Ill.; Dallas 2, Tex.; Denver 3, Colo.; Houston 2, Tex.; Indianapolis 1, Ind.; Los Angeles 5, Calif.; Minneapolis 3, Minn.; New Orleans 16, La.; New York 17, N. Y.; Norfolk 2, Va.; Seattle 1, Wash.



The Readers Always Write

"Twin Post" Trademark

Dear Editor:

Our attention has been directed to paragraph 2 under, "Cars With Air Suspension," on page 4 of April issue of Motor Age.

Perhaps we should first tell you "Twin Post" is a registered trade mark owned by the Weaver

Manufacturing Company and when used in connection with automotive lifts has the same implication as the word "Kodak" has to photography equipment or, as "Power Glide" has to automobile transmissions.

Because of the above fact, the implications contained in the statement in the paragraph referred to, is inaccurate. "Twin Post" Lifts, even though made some 25 years ago, because of their exclusive design, cannot possibly interfere with gasoline tanks, stabilizers, etc.

If your statement had have used the term, "two post," instead of "twin post," it would have been all inclusive insofar as automobile lifts using two posts, or pistons, is concerned. As the statement was used, it refers specifically to our product.

We believe your statement should be corrected to the effect that it should have read, "two post" hoists, etc., etc.

May we please hear from you?

Ruel Logan,

**General Sales Supervisor,
Weaver Manufacturing Co.,
Springfield, Illinois**

Silent Doors Needed

Dear Editor:

"What this country needs..."

Automobile doors that can be closed silently.

Consider the millions of hours of lost sleep and the strained relations caused by the necessity at all hours for one's neighbors to *slam* their car doors in order to close them.

**Franklin Pierce
San Rafael, Calif.**

Service Dept. Booster

Dear Editor:

I have just completed reading your article in Motor Age, titled "Service Absorption Versus Sales Absorption." As a result, I have felt compelled to write you on how well I liked and agreed with your opinions.

For the past ten years I have been a service salesman in the automotive field. In this period I have been able to develop a background, as well as ideas on what and how is automobile service sold.

It is gratifying to find a dealer who expresses sincere interest as well as constructive plans on running a service department.

Much too often is the service manager burdened with infinite and overwhelming detail and, therefore, must sacrifice the all-important task of administering his department, as well as carrying on proper customer relations. It is no small wonder at the large turnover of service managers and personal in our field. A prerequisite in the correct function of an organization or department is operating procedure or policy. . . . Isn't it time that we concentrated on qualitative work, instead of quantitative? The average motorist is truly fearful of driving into a dealership because he feels he will not be getting even three-quarters of his dollars worth. By honestly showing a motorist how a front end correction will help him save the cost of an entire set of tires, I have been able to sell many an alignment as well as wheel balance and steering adjustment.

Yes, the service department is a profit-making department if, as you say, a sensible attitude is taken and efforts are made to secure a top echelon type of personnel, and, in turn, maintain an intelligent approach to our customers.

**Jerry Greenbaum
Levittown, Penna.**

"How Motor Age Came to my Rescue"

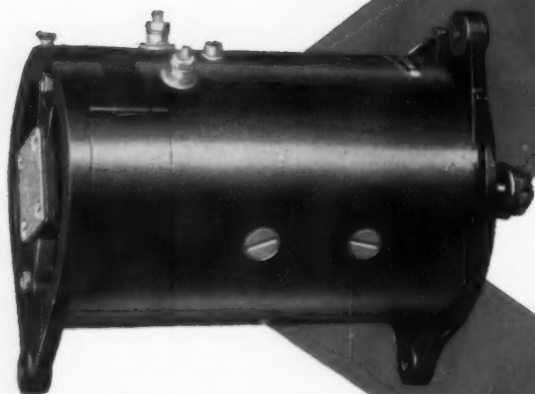
This year we are having an occasional contest for our readers. The subject: "How Motor Age Came to My Rescue." The prize—a \$25.00 U.S. Savings Bond for the best letter on how Motor Age serves you best. First winner was announced last month.

There are no entry fees . . . nothing to buy . . . no strings attached. All that you need do is to write a letter on your business stationery on the subject. Sign your name and title.

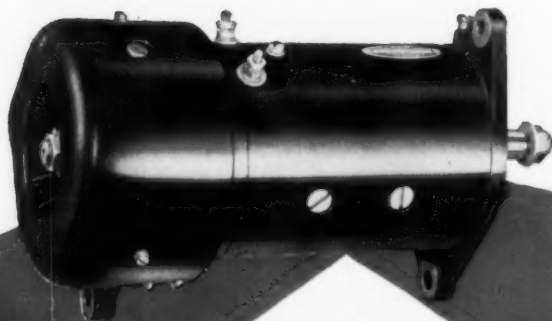
The contest is open to all subscribers of Motor Age, excepting employees of the Chilton Company, publishers of this magazine.

Writing style, grammar, are not essential factors in winning the contest. It's your ideas, your testimony that counts. Motor Age editors will be judges in this contest and their decision will be final.

ONLY DELCO-REMY COVERS



FULL LINE OF EXTRA-OUTPUT D.C. GENERATORS
FOR MEDIUM- TO HEAVY-DUTY APPLICATIONS



NEW TOTALLY ENCLOSED GENERATORS FOR OFF-THE-ROAD APPLICATIONS

Forced-air cooled for 50% more output with no increase in size! Splash-proof. Dust-proof. 6-, 12-, 24-volt d.c. models.



NEW PIGGY-BACK GENERATORS

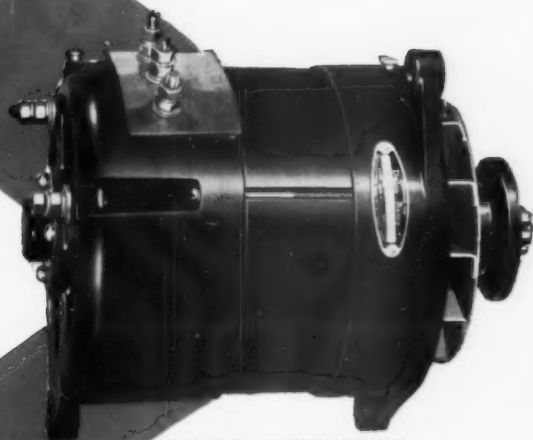
Extra power with economy! Tailored extra output in single voltage systems. You can use both 6- and 12-volt d.c. units on the same vehicle.

CHECK THESE EXTRA-DUTY D.C. FEATURES

- Substantial output at engine idle where required
- Greater brush area—better commutation, longer brush life
- Ball bearings at both drive and commutator ends
- Sealed field coils—impervious to moisture and corrosion
- Double insulated armature coils—nylon and cotton
- Hot-impregnated armature for extra insulation
- Dynamically balanced armature
- Wider, heavier brushes—service up to 100,000 miles is common

ALL THE BASES!

*The only complete
line of both d.c. and
a.c. generators—
right for your job!*



FULL LINE OF A.C. GENERATORS FOR
EXTRA-HEAVY ELECTRICAL LOADS

CHECK THESE SUPERIOR A.C. FEATURES

- Greater output at engine idle
- Dependable performance at all operating speeds
- *Exclusive* self-regulating current control—no current regulator or limiter needed
- *Exclusive* stainless steel slip rings
- Extra-large ball bearings at both drive and commutator ends
- Shaft-keyed rotors prevent high torque slippage
- Easy all-around maintenance—positive oiler lubrication

Chilton's MOTOR AGE, JULY, 1958

Name your generator need. Better charge at engine idle? More power for the ever-increasing demands of more and more electrical accessories? Lower replacement cost for lighter duty operation?

You name it. Delco-Remy meets it. Delco-Remy, in fact, has the *only* complete line of both d.c. and a.c. generators with matching waterproof regulators to meet every fleet requirement. Whether you haul light loads or heavy loads—off the road, around town, or across the nation—at highway speeds or in creeping traffic—Delco-Remy has the *right* generator to fit your need.

The complete Delco-Remy line brings you this important benefit: When you buy these extra-duty generators through the United Motors System, or from your vehicle dealer, you get the tailored performance you need—at minimum cost.

Specify Delco-Remy extra-duty generators on your new equipment, and for replacement on your present equipment. Only the complete Delco-Remy d.c. and a.c. line covers all the bases to fit every generator need.

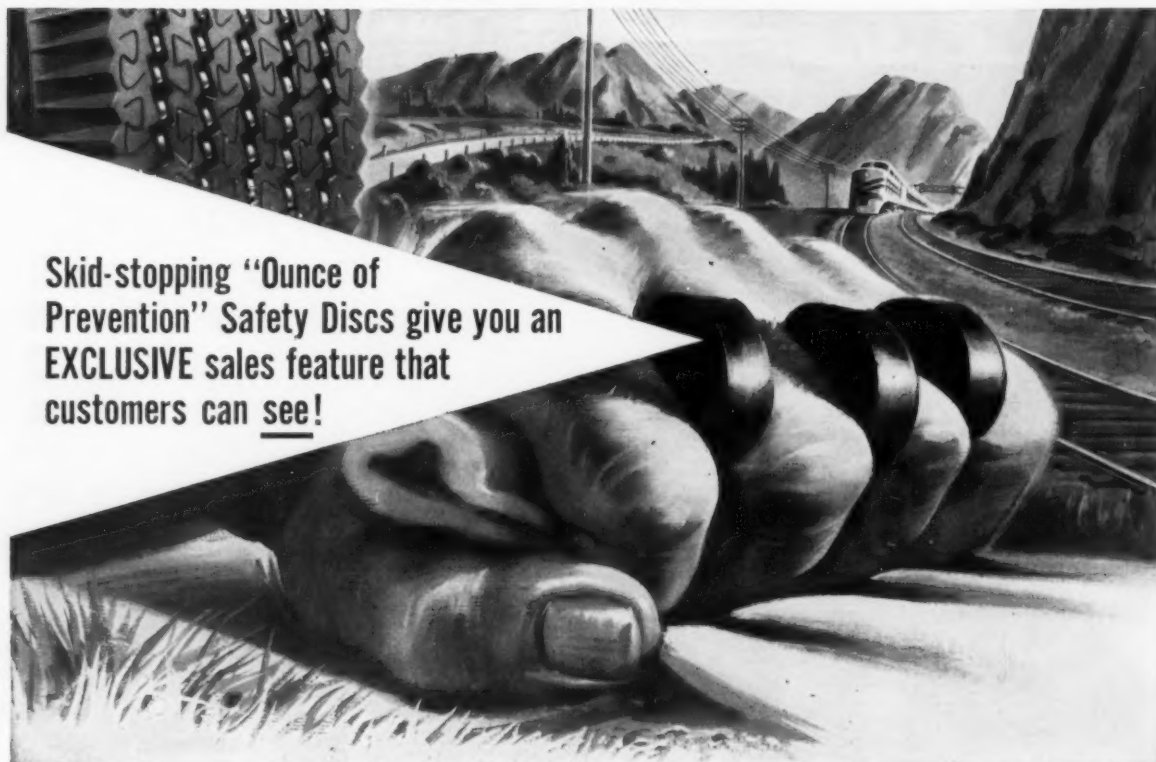
GENERAL MOTORS LEADS THE WAY—STARTING WITH

Delco-Remy

ELECTRICAL SYSTEMS

DELCO-REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

Famous Armstrong Tire "Fist" Pulls In Sales For You — As No Other Brand Can



Skid-stopping "Ounce of Prevention" Safety Discs give you an **EXCLUSIVE** sales feature that customers can see!



Why sell tires your customers can't tell from any other tires?
Why compete on a price basis that squeezes your profit?

Sell Armstrongs! Customers can *see* the exclusive Safety Discs in the tread. Any salesman can *demonstrate*, in 10 seconds, why Armstrongs stop skids as no other tires can. Once sold, Armstrong customers stay sold — come back for more.

For more sales, easier sales, bigger profit — get the Armstrong story!



ADVERTISING ADDS SELLING PUNCH!

In LIFE, POST . . . on TELEVISION . . . Armstrong advertising is big-time, frequent. Hits hard because it tells the same proved "fist" story over and over.

GUARANTEE CLINCHES SALES!

Unconditional road hazard Lifetime Guarantee is longest, strongest in the industry. **Get the story!**

THE ARMSTRONG RUBBER CO.

Home Office,
West Haven, Conn.

SPORTS PAGE

Little Leaguers Across the Sea

OFFICIAL necks turned a hot and painful pink the other month when the Brussels World Fair opened with an exhibit called "Face of America" which coldly ignored baseball, that enfeebled but purely American institution which Abner Doubleday invented twenty-one years before he was born. There was a sort of glass coffin containing shoulder pads, cleats and other impedimenta of the college football player but not so much as one sweatsock that might have been worn by Babe Ruth.

This was regarded as an outrage and a desecration, for everybody knows that football is a corruption of English rugby whereas baseball is indigenous to this land. Everybody knows that in 1839 Cadet Doubleday, aged twenty, went up to Cooperstown, N. Y., and there invented the game which Jane Austen had mentioned specifically in "Northanger Abbey," which she wrote in 1798.

"We've got to get busy and remedy the situation," said a mortified American official in Brussels.

Yesterday a man came through New York en route to Brussels to remedy the situation, he hopes. He is Peter J. McGovern, an old oarsman from Philadelphia, who is President and Chairman of the Board of Little League. During a hasty visit abroad, he will endeavor to arrange for a ball game in Brussels between Little League teams from Germany and England, which ought to help visitors from Pakistan get a picture of life in America.

Child Into Giant

The Brussels business is only part of McGovern's mission. Another chore is to arrange, if possible, for sectional tournaments among English, French, Italian and German



VIEWS OF SPORT
By Red Smith

teams so that Europe may be represented in the Little League World Series in Williamsport, Pa., this year. After that will come efforts in the same direction regarding Japanese and Hawaiian teams and such as competition grows more and more global among moppets of sub-teen age.

"You know, of course," he said at luncheon, "that Little League has crossed national boundaries. I think you know Adm. Dan Gallery, the Little League commissioner in Puerto Rico. As the movement grew, it was no great problem to bring teams from Canada and Mexico to Williamsport but getting them to the World Series from Europe and the Orient is something else.

"You can get an idea of the growth of this movement when I say that in 1948 we had fifteen leagues and this year we will have 4,800. We estimate that about 3,000,000 people are associated with Little League, counting players, parents, administrative workers and so on.

"Last year a team from Monterrey, Mexico, won the World Series. They were wonderful little players, like scurrying mice. When they had runners on base they drove the defense crazy, with their coaches chattering signals in Spanish.

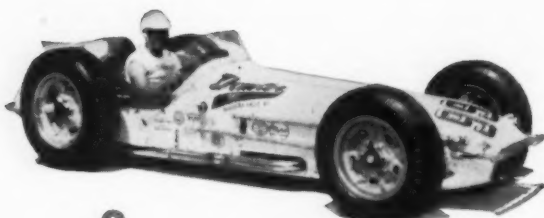
(Continued on page 72)

Again . . .

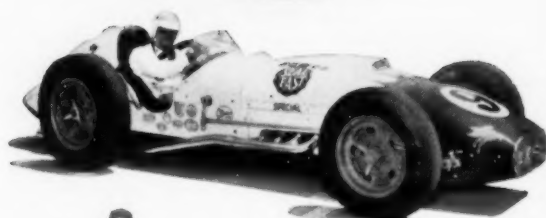
Cars with RAYBESTOS Brake Linings finished 1, 2, 3 at Indianapolis!



1 Jimmy Bryan, winner of the 1958 Indianapolis 500-mile race.



2 George Amick, runner-up in the "500."



3 Johnny Boyd, third in the "500."

... and every car that completed the grueling "500" had Raybestos*

Jimmy Bryan, winner of the 1958 Indianapolis "500," George Amick, runner-up, Johnny Boyd, third, and every other driver who went the distance, called on Raybestos Brake Linings about 500 times during that brake-torturing 4-hour grind. Their brakes always responded instantly and positively.

Clearly, Raybestos is the pick of the pros. Give your customers the one brake lining that licked heat and wear brake problems for Indianapolis race cars. Raybestos assures swift, smooth, silent stops every time and will give you repeat business from satisfied motorists.

*Certified by the United States Auto Club

NEW! Raybestos "Formula 48" Heavy Duty Brake Fluid

RELINE WITH
Raybestos
AMERICA'S BIGGEST SELLING FRICTION MATERIAL

RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., Bridgeport, Conn.



RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Brake Fluid • Clutch Facings • Industrial Rubber • Engineered Plastics • Sintered Metal Products • Rubber Covered Equipment • Asbestos Textiles • Laundry Pads and Covers • Mechanical Packings • Abrasive and Diamond Wheels • Industrial Adhesives • Bowling Balls

USE THE
Raybestos

**7 POINT
BRAKE
CHECK**

includes adjustment

You get paid for every car you check.
Ask your Raybestos jobber for full details today.

FLASH! Don't fail to see the new film "Brakes for 1958" at the Raybestos Brake Service Clinic

A technical color sound motion picture showing details on
• 1958 brake changes • New self-adjusting brakes
• Effect of 14-in. wheels on brakes • Center-plane brakes
Write to Raybestos Division of Raybestos-Manhattan, Inc., Bridgeport 2, Conn., for information on when a showing will be in your area.

mister jobber executive

Sun Electric Adds Product Line

Sun Electric Corp. has acquired the manufacturing facilities and product line of the panel instrument department of Texas Instruments (Dallas). These facilities have been integrated into Sun Electric's Instrument Division in Chicago.

Future Pacific Automotive Shows

Pacific Automotive Show has fixed dates for both the 1959 and the 1960 shows. In 1959 place will be San Francisco, March 12-15. In 1960, Denver, Col., will be the site with dates March 10-13.

Hall Lamp Sets Up New Dept.

C. M. Hall Lamp Co. has set up a new department to expand its parts and accessories business. Norman Sobol has been named sales manager for the new department ("After-Market Products Dept.") according to Hall Lamp president H. D. Hirsch.

B-19 Sponsors Seminar

A recent Automotive Jobbers Sales Management seminar sponsored by Automotive Booster Club of Detroit (B-19) has reported outstanding success. Seminar was held at Michigan State Univ., East Lansing. Attendance was high at each of the sessions held during the two-day conference.

Schools Program to Expand

NSPA is planning to expand its "Automotive Instruction In Our Schools" program. Robert E. Phelps, chairman of NSPA's Vocational Education Sub-Committee reported that the program has made great progress

since its start four years ago.

School officials are reported as becoming more aware of the needs of the Automotive Service Industry and are upgrading their schools' automotive training programs accordingly.

AEA 1958 Handbook Released

Just released is the Automotive Electric Association's new 1958 edition of the Electrical Specifications Handbook. Manual gives adjustment and test specifications on starter, generators, distributors, and regulators. Data is listed by make and unit model number.

AERI Issues Resolution

Members of the Automotive Exhaust Research Institute approved a resolution with regard to participation in Regional Automotive Parts shows. The resolution declared that the Institute will participate in only one Regional Show per year with display or booth space. Also that the Show will be located in the city in which the annual convention of the NSPA and the MEWA and MEMA are held.

AERA Elects New Officers

The 36th Annual Convention of the Automotive Engine Rebuilders Assn was held recently in Washington, D.C. New officers elected were the following: President, Leonard Connett; First vice-president, Franklin C. Bradley, Jr.; Second vice-president, Richard S. Love; Treasurer, George W. Yount. The 1959 Convention will be held May 17-20 in Toronto, Ont., Canada.

Operation JOBBER

Clinics Help to Inform the Trade

THE job of educating the trade is an endless assignment, but it doesn't have to be a chore. Enlightening the trade regularly on old products, new lines and improved service, is another method of a good selling job.

Many manufacturers and most jobbers are combining to hold clinics for specific classes of the retail outlets and even by job classifications within the trade. In this specialization age, car owners are turning more and more to service shops that have specialists for major repair jobs. They want faster service, feeling of assurance that maintenance work is done skillfully and by trained personnel.

If by some possibility you have never seriously considered clinics as a sure-fire method of increasing business, remember this: The car owner has the time-honored privilege of taking his car where he chooses. You can be sure that, year after year, he is taking it *where* he has the greatest confidence. This is normally the service outlet with the highest standards.

Planned Educational Program

It is of vital importance to you that he chooses *your customer!* It is also urgent that you have a

planned educational clinic program to raise the *standards* of service for independent servicemen. According to most surveys, they are the heart of your market and your *chief hope* for increased future volume.

There is a bright future for the automotive jobber for a variety of reasons.

He has at his command the specialized, technical "know-how" of hundreds of outstanding manufacturers of parts, accessories, tools, equipment and supplies. Most of these men can be enlisted in the cause of better service education. The happy fact is that many leading manufacturers consider jobber sponsored clinics the number one method of scientific selling. They often employ trained crews whose only job is helping the jobber increase volume with planned customer education and better service methods.

Before You Plan A Clinic

An effective educational campaign requires considerably more than a mere desire to "hold a meeting". First, the product or lines to be featured must be decided. Next, your assignment calls for conferences with leading suppliers to determine objectives, possible dates. Also, check these requirements:

1. *Make sure there will be competent, specialized instructors with complete knowledge of their subject.*
2. *The clinic should be held in your place of business to acquaint key customers with your store, its arrangement, your shop, merchandise displays, etc.*
3. *Make certain you, or one of your key executives, have time to plan and execute good clinic or educational programs.*
4. *In cooperation with your suppliers, decide what will be needed in the way of demonstrations, charts, other physical or visual aids to make your clinic interesting as well as educational.*
5. *Insist and plan for a follow-up selling program to start immediately after the clinic.*

Since thirty to sixty days are needed to plan a properly staged clinic, *now* is not too soon to start setting up a Fall Clinic schedule. Plan well! Many clinics never have the slightest chance of paying off. They were poorly planned at the outset! Detailed planning, up to the time the clinic starts, can pay dividends in recruiting old customers, creating new ones and building good will.



Deep interest in all things automotive was a Pied Piper bringing the crowds flocking in . . .

Public Flocks to PARTS Show

WHAT has been described as among first public automotive parts and equipment show of its kind has been held in Bay City, Mich. Invited were the car owners in a 12-county area. This three-day show, organized by City Auto Parts Co., was a move to better acquaint the public with the parts and service business; to show them how their automobiles operate; to popularize the hundreds of service outlets in the area.

The Tri-City Automotive Parts and Equipment Show is now history, but its remarkable success may well set a pattern for the industry.

Larry Kozlowski, sales manager of City Auto Parts, worked up the idea. He reasoned that people who normally spend more on their cars (\$1,000 per year) than they do on their

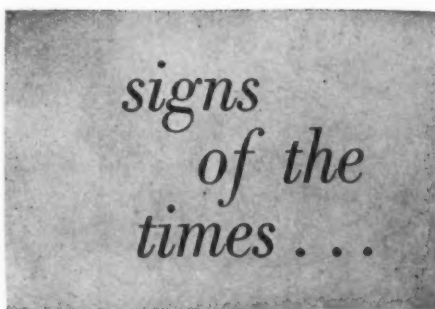
homes would welcome a chance to find out "what makes it tick." So he invited them to the local Armory to visit factory specialists, equipment displays, working models of various automobile components, and some actual manufacturing processes.

In Bay City 25,000 people flocked to the show. A total of 5,000 high school students came to inspect the things they will someday buy. Some forty-one exhibitors from manufacturers met and talked with their customers. There were no sales made here. None was expected. This was an attempt to lay the groundwork for improved customer relations and strengthen confidence in the 1,028 automotive dealers in the area. The payoff should come later, when City Auto Parts hopes for even a 5 per cent increase in sales to offset the enormous cost of un-

derwriting the Michigan show.

The equipment and parts represented on display ran the entire gamut of the industry. Many displays were set up to show the actual operation of various vehicle assemblies. In some cases actual manufacturing was done under the eyes of the spectator.

For example, Inland Rubber set up a machine to build and cure tires right on the Armory floor. Grizzley installed a brake bonder and performed the work at their display. Engine Rebuilders, Inc., set up a cutaway engine and operated it to show all functioning parts. United Motors displayed a cut-away automatic transmission and showed customers how it functioned. Paint companies, piston ring manufacturers, fuel, carburetion, and exhaust system makers also displayed products.



Officials of The Electric Auto-Lite Co. celebrate acceptance of their new Auto-Lite Resistor Spark Plug (with Power Tip) on the occasion of second anniversary of its introduction. Cutting the cake is J. W. Lingle, merchandising manager. Looking on are W. E. Blank (center) vice president, Marketing; and Robert Twells, Spark Plug group vice president.



Lowell Thomas (2nd from left), global traveler and explorer, reminisced of his famed wanderings for the benefit of the Automotive Electric Association's recent meeting in New York City. Others shown include Gene P. Roberts, AEA president (on Thomas' right); Ed Lape, general sales manager, United Motors Service division of General Motors; J. Howard Reed, AEA executive secretary.

AAC Elects Officers, Board

New officers and board members of Automotive Advertisers Council were elected recently in Cleveland. Officers are: Frank Schuhle, president; Les Dobrunz, vice-president; Bob Wolfson, treasurer; Al Joseph, corresponding secretary; Bob Calderone, recording secretary.

New board members include: Ed Todd, Dick Carr, Homer Lange, Bill Banta, and John Slemenda.

Eaton Enters Replacement Field

Eaton Manufacturing Company is entering the replacement market this month. The Cleveland firm offers parts for radiators and gasoline tanks of automobiles, trucks and farm equipment.

E. M. de Windt, general manager of Stamping Division, reported full lines of radiator pressure caps, regular and locking gasoline tank caps, oil filler caps, and a new cap and radiator pressure tester are available. Approximately 100 U.S. and Canadian warehouse distributors are readying for distribution. They will merchandise through jobbers, who will sell to independent garages and service stations.

Andrew D. Grey Dies in Phila.

Andrew (Andy) D. Grey, Editor of Chilton's Automotive Book Dept. died June 18 in Philadelphia from a heart ailment. He was 48 years old.

Mr. Grey, who joined the Chilton Co. in 1934, was known to thousands upon thousands of automotive servicemen throughout the country for his excellent editorship of Motor Age's Flat Rate and Automobile Repair manuals.



Andrew D. Grey

He made his home at 41 South Madison Avenue in Upper Darby, Pa. Surviving are his widow and four children.

Training Program Aids Jobber

Allen B. DuMont Laboratories, Inc. has launched a program to aid the jobber sell equipment. The electronics firm has a training program for franchised jobbers handling the company's oscilloscope engine analyzer line.

Territorial selling agents conduct the program with supervision of factory field men. When the course is completed, the agent and jobber salesman work together.



Members of the Automotive Advertisers Council who met in Hot Springs, Virginia recently. Standing in the front row are treasurer M. Robert Wolfson (3rd from left); Frank Schuhle, president (4th from left); Lester Dobrunz, vice president (5th from left); Albert Joseph, corresponding secretary (6th from left); and Robert Calderone, recording secretary (extreme right, front row).

Students Reveal Vehicle Faults

Students of Minneapolis' Dunwoody Industrial Institute turned up evidence last month supporting the value of statewide safety-check programs.

They checked 91 cars belonging to other students and Institute personnel. Uncovered were 44 improperly adjusted headlights, 34 unmuffled exhausts,

20 illegal brakes, 16 vision obscurances, 15 unlit license plates, 6 disabled headlamps, 4 illegal lamps, 4 useless directional signals, and 3 stop lamps out of order.

The inspecting students are members of the "Future Automotive Technicians of America" club. Statewide safety check is part of a compulsory vehicle inspection program. It's currently before the Minnesota legislature.



Sam Hanks (fourth from left), 1957 Indianapolis 500 winner, discusses this year's race with officials of the Bingham-Herbrand Corporation. From left: R. C. Tyson, Southwestern representative, Herbrand Division; F. R. Middleton, sales manager; T. A. McMullen, vice-president and general sales manager; Hanksffii and A. R. Karlovetz, Herbrand's general sales manager.

Industry Meetings

Aug. 11-14—1958 SAE National West Coast Meeting, The Ambassador, Los Angeles, California.

Aug. 13-17—Rod and Custom World's Fair, Industrial Arts Bldg., West Springfield, Mass.

Aug. 27-30—Automotive Parts Rebuilders Association convention and trade show, Conrad Hilton Hotel, Chicago.

Oct. 15-18—Automotive Wholesalers of Texas convention, Moody Civic Center, Galveston, Texas.

Oct. 20-22—1958 SAE National Transportation Meeting, Lord Baltimore Hotel, Baltimore, Maryland.

Oct. 27-28-29—New Jersey Automotive Trade Association, Chalfonte-Haddon Hall—Atlantic City.

Nov. 12—Connecticut Automotive Trades Assn., Hotel Statler, Hartford.

Dec. 12-16—Automotive Warehouse Distributors Association Convention and manufacturers-distributors conference, Muchlbeck Hotel, Kansas City, Mo.

Febr. 18-21—International Automotive Service Industries Show, Navy Pier, Chicago.



This stylish touring car, part of a nostalgic era of our country, is seen in Monroe Auto Equipment's new film, "Dust Off Your Goggles," a 17-minute color presentation of latest safety factors. Film is available for both jobbers and auto dealers.



Sales manager Claude Suttles is seen above having his mustache clipped off by master barber Walter Bush for the Moog Piston Ring contest. All expense paid trips to Mexico will be awarded in the contest for closest estimates on number of hairs in Suttles' mustache.

Automotive Wholesalers' Sales and Inventories

Data from Bureau of the Census, Department of Commerce

Region	Per Cent Change					
	Sales			Inventories		
	Apr. 1958 from Apr. 1957	Apr. 1958 from Mar. 1958	4 Mos. 1958 from 4 Mos. 1957	Apr. 1958 from Apr. 1957	Apr. 1958 from Mar. 1958	
New England.....	- 4	+16	-10	- 2	- 4	
Middle Atlantic.....	+15	+17	+ 5	+ 4	+ 3	
East North Central.....	+ 3	+ 6	- 2	
West North Central.....	+17	+21	+ 4	- 2	+ 2	
South Atlantic.....	+ 1	+ 5	- 1	- 1	0	
East South Central.....	- 4	+ 3	0	+ 8	0	
West South Central.....	+ 5	+ 4	+ 1	- 2	- 5	
Mountain.....	+12	+16	+ 4	+14	- 4	
Pacific.....	- 4	+ 9	- 3	+ 5	- 2	
United States.....	+10	+ 9	+ 8	+ 3	- 1	

Indicators of Business Activity

These figures are based on latest thirty-day reports

	Latest Data	Month Before	Year Ago	Percentage Change from—	
				Month Ago	Year Ago
PRODUCTION					
Motor Vehicles (Units).....	424,273	391,678	634,186	+ 8.3	-33.1
Industrial—F. R. B. 1947-'49=100 (Adj.)..	126	128	144	- 1.6	-12.5
SALES					
New Cars.....	425,000	418,255	556,324	+ 1.6	-23.6
Replacement Tires (Units).....	6,183,169	5,333,791	5,988,621	+15.9	+ 3.2
Manufacturers (\$ Millions)					
Durable Goods.....	\$11,504	\$11,670	\$14,254	- 1.4	-19.3
Non-durable Goods.....	\$13,343	\$13,261	\$14,425	+ 0.6	- 7.5
Department Stores. 1947-'49=100.....	134	131	131	+ 2.3	+ 2.3
GENERAL					
Consumers' Price Index, 1947-'49=100....	123.5	123.3	119.3	+ 0.2	+ 3.5
Civilian Employment.....	64,061,000	62,907,000	65,178,000	+ 1.8	- 1.7
Unemployment.....	4,904,000	5,120,000	2,715,000	- 4.2	+80.6



John H. Jones (above) of the A-B-C Company of Lansdale, Pa. was named president recently of the Middle Atlantic Automotive Wholesalers.

Glidden Co. Opens Automotive Center

Establishment of the Glidden Company's new Automotive and Industrial Sales and Service Laboratory in Detroit was announced recently by A. D. Duncan, Paint Div. vice pres. and general manager. The new facility will test industrial and automotive finishes. It will also demonstrate new emulsion finishes.



Recently awarded to the Gray Equipment Co. of New York was the Monroe Distinguished Distributor award. C. S. McIntyre (right above) Monroe executive vice pres. in charge of Sales presents the award to Frank Parker, Gray Equipment general manager.

Letts Honored By ASA Group

Clarence Letts, a 25-year member of Philadelphia's Automotive Service Assn., was honored at the group's 37th annual outing recently at Melrose Country Club.

Letts also served United Motors Service Division of General Motors for 37 years. He was active in educational clinics and programs.

Newly elected President of Pennsylvania Automotive Assoc., Philadelphia Buick dealer Dave Reese was among the guests.

Pyroil Acquires Kleen Pak Corp.

M. O. Weiby, President of Pyroil Co., Inc., has announced the acquisition of Kleen Pak Corp., West Salem, Ill. Kleen Pak produces oil filter replacement parts for cars, trucks and tractors.

NECROLOGY

Edward Jenkins, Columbia, S. C. and Charles Yount, Indianapolis, Ind.—longtime members of the Automotive Engine Rebuilders Assoc.—died April 3 and May 18 respectively.

Jenkins' career dates back to 1905 when he began a Reo car agency. Yount, one of the founders of AERA, served as president in 1926; treasurer from 1932 to his death.

Nate Shanedling, Advisor to the California Automotive Wholesalers Association, died June 10 in San Francisco. Mr. Shanedling had been hospitalized two days previously after suffering a severe heart attack on June 8.



J. Matthew Nelson (above) was recently installed as president of the Automotive Wholesalers Association of Tennessee. Nelson is president and general manager of Holston Auto Parts Supply Co. of Kingsport.

Pyroil, of La Crosse, Wisconsin, has manufactured gas and oil additives since 1929. Two years ago it acquired Champion-Laboratories, Inc., another producer of oil filter elements.

Weiby said the Champion and Kleen Pak plants would be combined at West Salem.



Turning up in Washington recently, J. L. Wiggins, exec. vice-pres. of N.S.P.A., urged an audience of National Assoc. of Wholesalers to gain further government recognition by submitting more statistical, survey services. Here, Wiggins (right), also chairman of N.A.W.'s Task Force Advisory committee, congratulates wholesalers' new group president, James E. Allen.

Motor Age's Who's Who



C. O. Wanvig, Jr., photo, was elected president of Globe-Union Inc., Milwaukee storage battery and electronic components manufacturer. **C. O. Wanvig, Sr.**, retiring president, will continue as chairman of the board.

W. S. "Bill" Nunn has been appointed to represent Lempco Products, Inc. in Southern California territory.

Ralph L. Carroll has been promoted to manager of the Cleveland sales office of Associated Spring Corporation.



Robert T. Hood, photo, has been elected vice president and treasurer of The Gabriel Company. **Thomas A. Chervenak** has been appointed controller of the firm.

L. C. Wolcott, presently chief engineer for Packard Electric Division, General Motors Corporation, will become director of sales and engineering for that division.

Donald D. Roberts has been promoted to sales manager for Eaton Manufacturing Company's Valve Division.



Melvin H. Campbell, photo, formerly secretary, has been elected executive vice president of Campbell Chain Company, York, Pa. **Robert P. Leister** moves from controller to secretary-treasurer.

Robert F. Norris has been appointed plant manager in charge of Denison Engineering Division of American Brake Shoe Company's Delaware, Ohio plant. **Carl W. Lindahl** is assigned to the position of works manager in charge of all Denison manufacturing activities at the Columbus plant. **George T. Hays** becomes director of purchasing for Denison Engineering Division.



Alfred G. McCarthy, left, has been named territory manager of the Northwestern New York-Pennsylvania territory for the AP Parts Corp. **Donald E. Heagle** has also been appointed a territory manager and will headquarter in Grand Rapids, Mich.



John A. McGuire, left, was elected an executive vice-president of Thor Power Tool company, Chicago. **James A. Lind** was elected a director.

Melvin Lill has been appointed chief automotive engineer of the John Bean Division.

John M. Gessleman has been appointed to the Exide Automotive Division staff as sales operating manager.

William J. Hawkins, photo, has been named general service manager of the Alemite and Instrument Division of Stewart-Warner Corporation. He replaces **J. R. Reinsma** who was named manager of industrial sales of Alemite lubrication products.



Robert O. Bass has been elected president and general manager of Morse Chain Co., subsidiary of Borg-Warner Corp.

Charlie Webb, district manager in Oklahoma for Standard Motor Products is transferring to northern California.

Herbert E. Markley, photo, was elected vice president of The Timken Roller Bearing Company. **Richard L. Frederick**, succeeds Markley as assistant to the president.



Paul P. Huffard, a director of the Union Carbide Corporation, has been elected to the board of directors of Greer Hydraulics, Inc.

Roger Wise, formerly manager of tire advertising, has been appointed merchandise manager for The Dayton Rubber Company's Tire Division.

William A. Knapp, photo, has been appointed manager of lubricating oil sales for the Kendall Refining Company of Bradford, Pa. He succeeds **Ray W. Sommer** who is transferring to the Ohio Division as Division sales manager.



MOTOR AGE

newscoop

Preview of '59 Models
No U.S. Small Car In '59
Aluminum Engines Planned
Service & Parts Sales Up
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GM Plans Motorama Show

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SERVICE STATIONS MAY SOME DAY become part of a "super market".... Predicts James G. Balmer, Jr., executive vice president of Harley Earl, Inc., industrial design firm.

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Rambler Adds New Dealers

RECORD BREAKING RAMBLER SALES continue to attract new dealers into American Motors organization.... In May, corporation added 89 new dealers, bringing total dealer force to more than 2500.... An increase of about 20 per cent above last year.... Through end of May, Rambler sales were running 80 per cent ahead of last year.

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Chevy helped boost GM's share of market to nearly 49½ per cent.... From 45½ per cent last year.... Ford's total share dropped from 30.1 per cent to 25.8 per cent.... Chrysler Corp. tumbled from nearly 19 per cent to 14½ per cent.

GM Plans Its Motorama Show

GENERAL MOTORS HAS SHAPED UP PLANS for its Motorama show.... Although some reports indicate it could still be cancelled, present plans call for multi-million dollar extravaganza to be held in mid-October in New York City's Waldorf-Astoria Hotel.

Motorama date confirms reports that GM's entire line of cars will be introduced much earlier than 1958 models.... It'll mark earliest postwar introduction for GM.... Sept. 15 fixed as date for introduction of first 1959 GM car.... A month ahead of '58 introduction.

Show will also climax GM's 50th anniversary. One feature of show will be an improved version of Firebird car, GM's experimental vehicle. ... Show will be televised nationally, according to present plans.

Auto Price Fixing Probe Spreading

GOVERNMENT PROBE OF AUTO PRICE-FIXING complaints is spreading.... Justice Dept. lawyers in several cities dig into charges that some new-car dealer groups agree on a price pack.

Washington federal grand jury inquiry (MOTOR AGE, May, page 36) is continuing.... Word is that grand juries in New York, San Francisco, Cleveland, and Detroit also are hearing evidence.

Car Registrations Slow Down

SLOWER RATE OF GAIN IN CAR, truck, bus registrations revealed.... Bureau of Public Roads counts 67.1 million vehicles in 1957, or 3 per cent more than in 1956.... 1956 increase over 1955 was 4 per cent.

With new car sales lagging this year, registration rate may slow further.... At same time owners may buy more repairs to keep older cars running.

Warns Against Government Interference

ANY NEW LAW TO MAKE IT TOUGHER for firms to merge should exclude retailing, David O. Falk tells Congress.... This Tampa, Fla., merchant warns against government interference with market for sale of a retail business.

A retailer's personal considerations prompt most retail mergers, he says.... He does not believe a retailer exemption would weaken competition.

Interest Rates For Loans Falling

MONEY MARKET LOOKS RIPE for business borrowing in next few months.... Retailers should be able to get loans at attractive rates.... To restock goods and expand.

Interest rates for short and medium-length loans are falling, government money experts discover.... Sluggish business activity led to the change.... Borrowing was off even before 1957 ended.

Bill To Protect Factory Payments To Dealers

SPEAKING UP FOR SALES AND SERVICE responsibility bill before Senate Commerce Committee on June 23 was NADA.... Sen. Potter, R., Mich., offered bill, S. 3865.

It would protect factory payments to dealers to insure sales, servicing within specified areas.... Committee asked Justice Dept. for its views.... To find if department opposes bill on antitrust grounds.

Tax Relief On Automotive Products Defeated

SENATE TURNED DOWN EFFORTS in June to repeal excise taxes on autos, parts, accessories.... Despite plea that an end to the auto tax would boost new-car sales.... And put new strength into national economy.

Defeat in Senate rules out tax relief on automotive products this year.... House earlier had failed to trim or repeal taxes on these items.

Passage Of Auto Price Labelling Likely

JUSTICE DEPT. ARGUMENTS FAILED to stop Congress from passing auto price labelling bill, S. 3500.... Passed by Senate and House, the bill (at this writing) is now on President Eisenhower's desk for signing.

Justice Dept. objected to "singling out automobile industry for special treatment."... Argued that manufacturers should not be encouraged to take part in development of resale prices.

Auto Tire Trade Employees Exemption Proposed

EXEMPTIONS OF AUTOMOTIVE TIRE TRADE employees from \$1-an-hour minimum wage law proposed.... U. S. Labor Dept. would excuse, under certain conditions, sellers of tires, tubes, accessories, and tire repair services in a retail outlet.

Recapping, retreading workers also could be exempt.... Department in June asked written comments on its proposal.

Postal Rates To Rise

GET SET FOR HIGHER POSTAL RATES.... You'll have to spend more if you mail bills to customers. First-class mail rate goes to 4¢ per ounce, starting Aug. 1.... On same date, air mail rate rises from present 6¢ to 7¢.

Post cards move from 2¢ to 3¢.... Next Jan. 1, third-class rates will go up.... Bulk advertising, circulars will cost more to mail.

Bill To Help Driver Training Proposed

NATIONAL SAFETY COUNCIL, other groups give favorable testimony on auto driver training bill, H. R. 12804.... Rep. Roberts, its author, is expected to try to get bill to House floor before session ends.

It would allow states \$28 million a year to run driver training and research programs.... States drawing this federal money would have to match it in full.

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HOW ARE INDIVIDUAL CAR COMPANIES faring so far in sales penetration? Registration figures for first four months, show six makes took larger share of market than last year.... Eleven were down.... Largest gainer was Chevrolet.... Jumped from 23 per cent last year to better than 27 per cent in first four months this year.

Largest loser was Ford.... Dropped from 24.6 per cent to 21 per cent.... More than 3½ percentage points. Next was Plymouth, dropping from 10 per cent to about 8½ per cent.... Buick, Mercury and Dodge declined better than one percentage point each under 1957.... Next largest gainer to Chevy was Rambler.... Picked up 1.2 per cent to take nearly 3 per cent of total market.

Chevy helped boost GM's share of market to nearly 49½ per cent.... From 45½ per cent last year.... Ford's total share dropped from 30.1 per cent to 25.8 per cent.... Chrysler Corp. tumbled from nearly 19 per cent to 14½ per cent.

GM Plans Its Motorama Show

GENERAL MOTORS HAS SHAPED UP PLANS for its Motorama show.... Although some reports indicate it could still be cancelled, present plans call for multi-million dollar extravaganza to be held in mid-October in New York City's Waldorf-Astoria Hotel.

Motorama date confirms reports that GM's entire line of cars will be introduced much earlier than 1958 models.... It'll mark earliest postwar introduction for GM.... Sept. 15 fixed as date for introduction of first 1959 GM car.... A month ahead of '58 introduction.

Show will also climax GM's 50th anniversary. One feature of show will be an improved version of Firebird car, GM's experimental vehicle. ... Show will be televised nationally, according to present plans.

Auto Price Fixing Probe Spreading

GOVERNMENT PROBE OF AUTO PRICE-FIXING complaints is spreading.... Justice Dept. lawyers in several cities dig into charges that some new-car dealer groups agree on a price pack.

Washington federal grand jury inquiry (MOTOR AGE, May, page 36) is continuing.... Word is that grand juries in New York, San Francisco, Cleveland, and Detroit also are hearing evidence.

Car Registrations Slow Down

SLOWER RATE OF GAIN IN CAR, truck, bus registrations revealed.... Bureau of Public Roads counts 67.1 million vehicles in 1957, or 3 per cent more than in 1956.... 1956 increase over 1955 was 4 per cent.

With new car sales lagging this year, registration rate may slow further.... At same time owners may buy more repairs to keep older cars running.

Warns Against Government Interference

ANY NEW LAW TO MAKE IT TOUGHER for firms to merge should exclude retailing, David O. Falk tells Congress.... This Tampa, Fla., merchant warns against government interference with market for sale of a retail business.

A retailer's personal considerations prompt most retail mergers, he says.... He does not believe a retailer exemption would weaken competition.

Interest Rates For Loans Falling

MONEY MARKET LOOKS RIPE for business borrowing in next few months.... Retailers should be able to get loans at attractive rates.... To restock goods and expand.

Interest rates for short and medium-length loans are falling, government money experts discover.... Sluggish business activity led to the change.... Borrowing was off even before 1957 ended.

Bill To Protect Factory Payments To Dealers

SPEAKING UP FOR SALES AND SERVICE responsibility bill before Senate Commerce Committee on June 23 was NADA.... Sen. Potter, R., Mich., offered bill, S. 3865.

It would protect factory payments to dealers to insure sales, servicing within specified areas.... Committee asked Justice Dept. for its views.... To find if department opposes bill on antitrust grounds.

Tax Relief On Automotive Products Defeated

SENATE TURNED DOWN EFFORTS in June to repeal excise taxes on autos, parts, accessories.... Despite plea that an end to the auto tax would boost new-car sales.... And put new strength into national economy.

Defeat in Senate rules out tax relief on automotive products this year.... House earlier had failed to trim or repeal taxes on these items.

Passage Of Auto Price Labelling Likely

JUSTICE DEPT. ARGUMENTS FAILED to stop Congress from passing auto price labelling bill, S. 3500.... Passed by Senate and House, the bill (at this writing) is now on President Eisenhower's desk for signing.

Justice Dept. objected to "singling out automobile industry for special treatment."... Argued that manufacturers should not be encouraged to take part in development of resale prices.

Auto Tire Trade Employees Exemption Proposed

EXEMPTIONS OF AUTOMOTIVE TIRE TRADE employees from \$1-an-hour minimum wage law proposed.... U. S. Labor Dept. would excuse, under certain conditions, sellers of tires, tubes, accessories, and tire repair services in a retail outlet.

Recapping, retreading workers also could be exempt.... Department in June asked written comments on its proposal.

Postal Rates To Rise

GET SET FOR HIGHER POSTAL RATES.... You'll have to spend more if you mail bills to customers. First-class mail rate goes to 4¢ per ounce, starting Aug. 1.... On same date, air mail rate rises from present 6¢ to 7¢.

Post cards move from 2¢ to 3¢.... Next Jan. 1, third-class rates will go up.... Bulk advertising, circulars will cost more to mail.

Bill To Help Driver Training Proposed

NATIONAL SAFETY COUNCIL, other groups give favorable testimony on auto driver training bill, H. R. 12804.... Rep. Roberts, its author, is expected to try to get bill to House floor before session ends.

It would allow states \$28 million a year to run driver training and research programs.... States drawing this federal money would have to match it in full.

Meet "Mr. Inside" and "Mr. Outside"



Dynamic Partners of a Volume Shop Team

*Behind-the-scenes visit
with Paul & Pete Hill to
uncover 10 rules for
Management profit*



Above, top left: Shop of the Month award presented to Hill's Auto Service. Center: Hill Brothers Paul and Pete (on right). Below: candid view of service entrance of one of the Hill shop buildings.



HOW do you set up your automotive repair business to realize an annual volume of \$120,000? One good way is to study a shop that's doing it. Hill's Auto Service in New York state, for example. The shop is run by the unique management team of the Hill Brothers—"Mr. Inside" and "Mr. Outside".

Here's how they work. Pete, "Mr. Inside",
(Continued on next page)

"Mr. Inside" & "Mr. Outside"

Continued from preceding page



Above: special courtesy towards all women customers is a tradition at Hill's Auto Service.



Headlight aimer at left is an example of the many types of equipment in use at the shop.

Below: busy scene at main service building is indication of why the shop's \$120,000 volume.

Ten Reasons Why Hill's Auto

1. The two brothers are practicing businessmen.
2. To excellent mechanical skills, they add the know-how of "Salesmanship."
3. They cater to the woman driver and they meet "rush" deadlines.
4. Training of mechanics is planned and supervised.
5. Mechanics are paid well—turnover low.

specializes in directing service repairs in their shop's big location on East Third St. in Mt. Vernon, N. Y. Pete sees that cars are fixed right. On time. He also works in "rush" jobs with a minimum of confusion—without rushing quality.

Paul Hill, "Mr. Outside", is contact man of the partnership. He concentrates on meeting and mixing with the public in general and the motorist in particular. "Mr. Outside's" overriding concern is that courtesy, attention to the woman driver, attractive approachways, and neat buildings and equip-



Service Shows Volume Profits

6. Utilization of latest tools, equipment, and instruments.
7. Provide large, uncluttered working areas.
8. Keep up-to-date with latest mechanical changes in new cars.
9. Good supply of parts kept in stock.
10. Purchase supplies in quantity to effect savings.



Maintaining good supply of parts in stock is rule of Hill Brothers.

ment are not empty slogans. The community's opinion of their shop is vital to Paul. He wants it kept on its already high pinnacle.

Attracting new business, purchasing of supplies and parts stock in large lots to affect savings, all come under his wing.

Hill's Auto Service is a fine shop. A Volume Shop. The brothers have been managers and owners of their own business for 26 years. They started small, a 3 car garage and two pairs of hands (their own) back in 1932. The business grew. So much so that they built new buildings in 1954 to service 15 cars.

Today, their volume and their business are a thriving success, product of their enterprise and management techniques.

That's why MOTOR AGE selected the Hill Brothers' service establishment for this month's "MOTOR AGE Shop of the Month" Award.

MOTOR AGE, of course, knows—and has records—of thousands and thousands of other Volume Service Shops around the country. Shops which like Hill's Auto Service combine management know-how with mechanical

(Continued on page 96)

Training of mechanics (at right) is carefully planned and supervised operation at the shop.

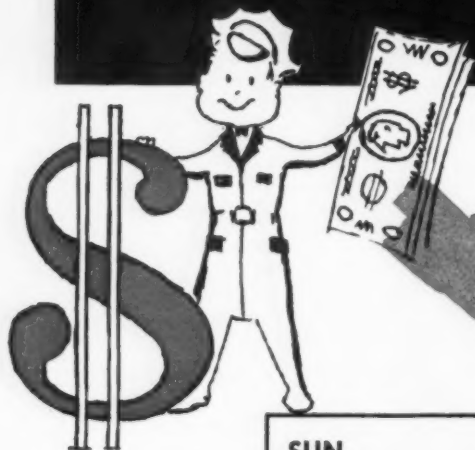
Below: being able to handle "rush" jobs has been big boost to "word of mouth" advertising.



August 1958

ASL

MOTOR AGE'S



QUICK CHECKS FOR QUICK PROFITS

SUN.	MON.	TUES.	WED.
3 	4 CAR SAFETY WEEK	5 "BEFORE VACATION TRIPS FOLLOW THE SAFETY CHECK TIPS"	6
10 	11 CAR ECONOMY WEEK	12 "FOR PEAK CAR PERFORMANCE GIVE THAT CAR AN ECONOMY CHECK UP"	13
17 	18 CAR UNDERBODY WEEK	19 "CHECK WHERE NO ONE SEES TO UNCOVER HIDDEN SERVICING NEEDS"	20
24  31	25 CAR INTERIOR WEEK	26 "GIVE A 'NEW LOOK' TO THAT 'OLD LOOK' CAR INTERIOR"	27

MERCHANDISING CALENDAR

Let Motor Age's MERCHANDISING CALENDAR WORK FOR YOU

NAMES OF EMPLOYEES						
Sales						Week's Sales
Service						
Score						
Sheet						
First Week						
Second Week						
Third Week						
Fourth Week						
Total Monthly Sales						

THURS.	FRI.	SAT.
7	1	2
<ul style="list-style-type: none"> ✓ Check steering, wheel balance & alignment. ✓ Check front & rear lights & turn signals. ✓ Check windshield wiper action & blades. ✓ Check brakes & shock absorbers. ✓ Check exhaust & muffler system. 	8	9
14	15	16
<ul style="list-style-type: none"> ✓ Check compression, spark plugs & points. ✓ Check battery, cables & voltage regulator. ✓ Check, clean & adjust carburetor. ✓ Check generator, starter & wiring. ✓ Check oil, gas & air filters. 		
21	22	23
<ul style="list-style-type: none"> ✓ Check springs & shackles. ✓ Check & inspect muffler & tail pipe. ✓ Check shock absorbers & steering linkage. ✓ Check air suspension system. ✓ Check front-end for wear & alignment. 		
28	29	30
<ul style="list-style-type: none"> ✓ Check hinges, latches & weather strips. ✓ Check floor mats & seat covers for wear. ✓ Check & clean door window trim & headlining. ✓ Check glass for discoloration & cracks. ✓ Check lighter, radio & instrument panel. 		

CALENDAR REPRINTS NOW AVAILABLE

Motor Age's Merchandising Calendar is now available in reprint form on request, at no cost to you. The Calendar is double size and is on special paper. This offer is limited to thirty days after publication. Send for your free August Merchandising Calendar NOW!!

Write to the Editor of Motor Age, Chestnut & 56th Sts., Phila. 39, Pa.

HOW TO USE MERCHANDISING CALENDAR

When you receive your August Calendar reprint, hang it in a prominent spot in your shop or service station. Place your employees' names in the Score Sheet. Then hold an informal sales and service contest. See who gets the highest sales score at the end of the month, by promoting sales and services mentioned in the check lists. As an incentive, offer a prize to the winner.



MOTOR AGE Merchandising Story of the Month

Talk **TUNE-UP** and watch your **Volume** grow!



Curious car owners are the best customers says George Mansfield. Instruments are a big help in showing the customer need of repair work.

Take a tip from Volume Shop operators . . . Let mechanics participate in service sales

By William H. Wolfe, Managing Editor

ONE time silence is NOT golden is in the matter of talking up service and parts sales! Take the item of tune-up jobs. A few customers will drive their cars in and say: "Give me a tune-up. The engine has been sluggish lately and I know the plugs have 10,000 miles on them."

But as the service specialist knows these customers are few and far between. Most tune-up jobs have to be sold. And they're sold through talking them up.

Listen to some comments around the country from Volume Shop operators who have found that "talking up tune-up" and other service facilities pays off:

"Tune-up is our big profit item," says George Mansfield of Covington, Kentucky. "We talk performance and economy when customers gas up at our pumps. If a car owner complains of poor mileage or lack of power, we make it clear what he should do. One sensible way he can pinpoint the source of trouble is with a compression check. This



Mansfield's Kentucky shop uses gas pump area to talk tune-up.



Mansfield shows customer on the spot results of compression test on his engine's cylinders.



New Jersey shop run by Mr. Shatz believes in theme of "Let the mechanic help in selling".

check is made while he waits . . . and watches."

Mansfield has an eight-stall shop complete with a four-pump gasoline island. His specialties include tune-up and front-end work.

To give you an idea of his volume, he recently received a personal visit from the manufacturer's representative of the spark plug line he carries. Got a fine pat on the back for his volume selling. Seems George's jobber reported to the manufacturer that Mansfield was averaging at least 500 spark plugs a month.

In the matter of the customer watching while the mechanic works, Mansfield says that his customers like to "kibitz" when their car is tuned. Test equipment used is impressive. Car owner soon gets to asking ques-

tions which really helps sell the service claim both Mansfield and his head mechanic Bryant Williams.

Florida "Sidewalk Superintendents"

The idea that car owners like to play "sidewalk superintendents" when mechanics are working on their cars is seconded by Bob Johnston, service manager of Darby Buick in Sarasota, Florida.

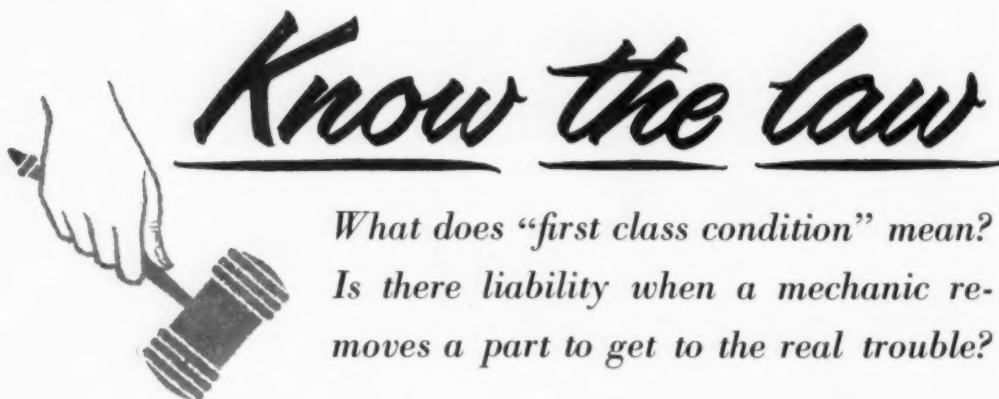
Bob says that his dealership has just rounded out 12 years of operation under a "Customer is welcome to watch" plan. Plan urges owner to walk into service department and see work progressing on his car.

"Customers get inquisitive and get their hands dirty sometimes," he adds. "But they

(Continued on page 102)



MOTOR AGE Management Story of the Month



*What does "first class condition" mean?
Is there liability when a mechanic re-
moves a part to get to the real trouble?*

Note: "Know the Law" was compiled and written for MOTOR AGE by Howard Newcomb Morse, Counsellor at Law. Mr. Morse is a member of the Bar of the United States Supreme Court.

"LIABILITY for Improper Performance of Automotive Repair Work":

The plaintiff undertook to repair a defect in the defendant's automobile. The plaintiff had in his employ several mechanics, who did the actual repair work. A few days after the work was completed, trouble developed in the starter. The defendant refused to pay the balance of his bill. The plaintiff brought suit for the balance. The defendant interposed a counterclaim substantially equivalent to the balance.

At the trial the defendant produced an expert witness who testified that the starter had not been fastened on properly; that it was put in crooked, and therefore jammed. The plaintiff argued that the starter had not been removed by him or any of his mechanics.

The defendant's expert witness was asked: "... doing the work which Kendrick (the plaintiff) said was done on the car, was it necessary to remove the starter?" The defendant's expert witness answered: "It is necessary to remove the starter." The witness was then asked: "In this case the

starter, in your opinion, was removed?" The witness replied: "It had to be removed."

Is Mechanic Liable?

The question thus posed is this: "If a mechanic properly repairs the part in an automobile which he was engaged to repair, but a second part causes trouble due to improper installation for the first time after the work is completed, and it is shown that the second part had to be removed in order to get to the first, is the mechanic liable for the defective condition of the second part?"

The Appellate Division of the Supreme Court of New York answered "Yes" (in the case of Kendrick vs. Rolle). The Court held that in the face of the uncontradicted testimony by a man of conceded expertness, and in the absence of any evidence to the contrary, it was established at the trial that the defendant's car was damaged by a misplacing of the starter.

The Court concluded that the starter must have been removed by the plaintiff's mechanics when they made the repairs for which the plaintiff's bill was rendered.

Now let's look at another case:

What Is First Class Condition?

In the case of Satterlee vs. Lawler a truck, which had been damaged by fire, was

left for repairs. The plaintiff-automotive repair company wrote the following message to the defendant-truck owner:

"According to your instructions we agree to send this truck out to you in first-class condition."

After the repairs were made, the truck was delivered to the defendant. The defendant defaulted in payment of the plaintiff's invoice. The plaintiff thereupon instituted an action to replevy the truck. The defendant alleged that the plaintiff failed to repair the truck as agreed and claimed damages in an amount in excess of the balance due.

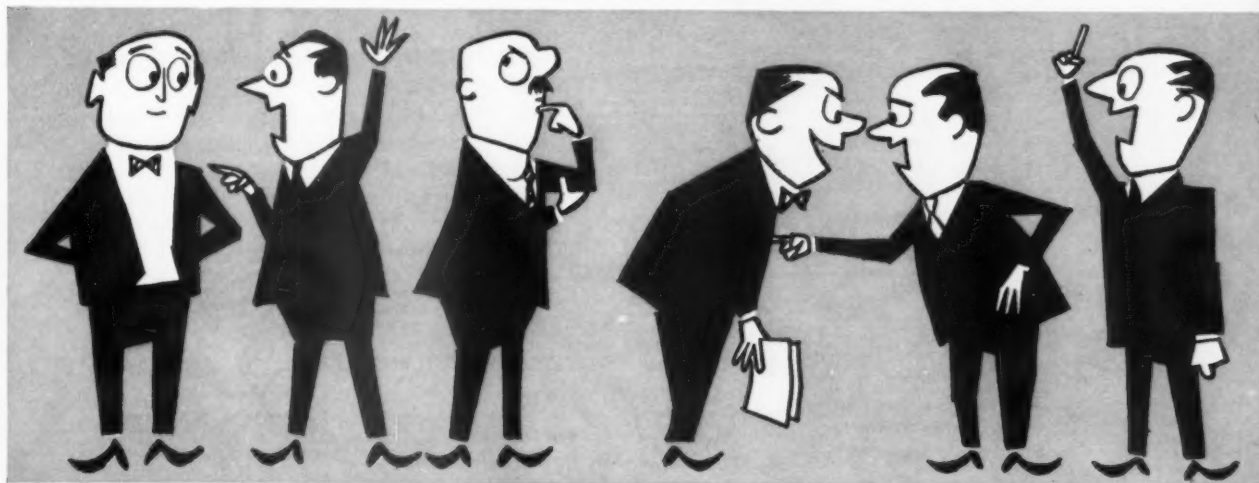
The plaintiff asserted that the meaning of the expression "first-class condition" is so

value in the condition it was in after it was repaired." The plaintiff contended that the measure of damages was the reasonable cost of properly making the repairs.

Determining Amount of Damages

The question presented is this: "Where an automobile or truck is delivered to a mechanic for repairs, and the work is defectively done but is of some value, and the owner must of necessity retain the benefit of it, is the measure of damages recoverable by the owner:

1. the difference in value of the vehicle as it is after being repaired and as it would have been had it been placed in first-class condition, or



indefinite that the trial court should have submitted to the jury the question of what the contract was. The Supreme Court of Minnesota rejected this assertion, declaring that: "We think this language so clear that there was no issue as to its construction."

The trial court charged the jury that if the plaintiff failed to repair the truck as agreed, the measure of the defendant's damages was "the difference in value of that truck as it would have been after it was . . . put in first-class shape after the fire, and the

2. the reasonable cost of properly making the repairs?"

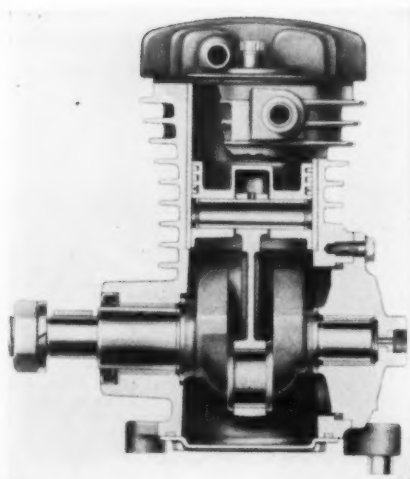
The Supreme Court of Minnesota replied: "... the measure of damages is the difference between the value of the property in its defective condition and its value if repaired in compliance with the contract."

However, the Court pointed out that where the cost of restoring the vehicle to its former condition is less than the difference in value, such cost is the proper measure of damages, for, in such case, this compensates the owner.



MOTOR AGE Mechanical Story of the Month

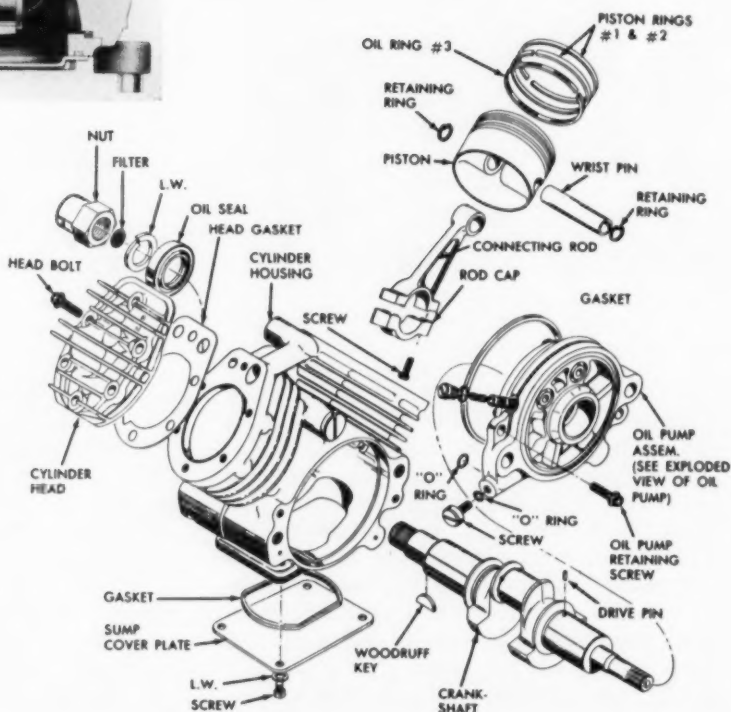
Here's new volume service— Repairing Air Suspension



Above: Cutaway of single piston compressor used on Chevrolets.

These new air suspension compressor units will soon be needing service. Your shop ready?

Exploded view of the twin cylinder compressor used on Buicks.



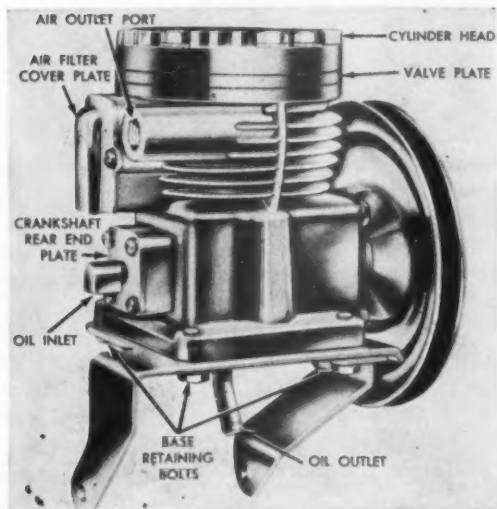
By John K. Montgomery
Technical Editor

Compressors

AIR Suspension is here to stay. The wise Volume Shop operator already has made sure his mechanics are learning proper service techniques on air suspension components. Let's look at the compressor:

Buick: Compressor is driven by the engine through a "V" belt at 1.15 times crankshaft speed, delivering air up to 290 psi stall pressure. The unit has two cylinders 90 deg. apart, operating on a plain crankshaft. It has a 1.875 in. bore by 0.906 in. stroke, giving a displacement of five cu. in. per revolution.

Compressor used on Ford air suspension.

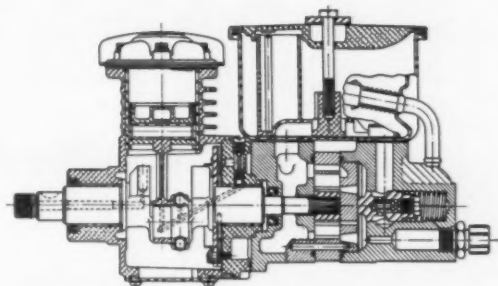


The cylinders and heads are aluminum with cast iron sleeve inserts. Valves are the reed type. A small vane pump provides lubrication to all bearings and also scavenges the compressor sump.

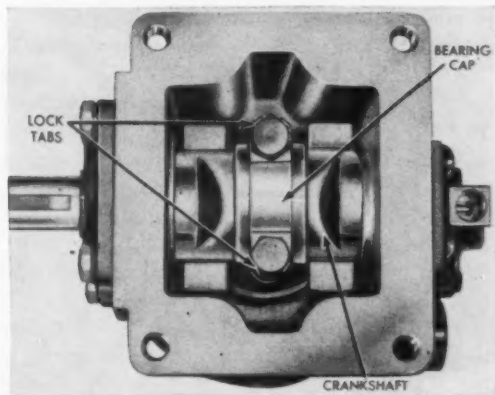
Ford: The compressor is a specially developed single cylinder air cooled pump. It is belt driven by the engine at approximately engine speed and is lubricated by engine oil. Its piston displacement is 2.71 cu. in. Balance pressure is approximately 300 psi. and maximum power requirement is one horsepower.

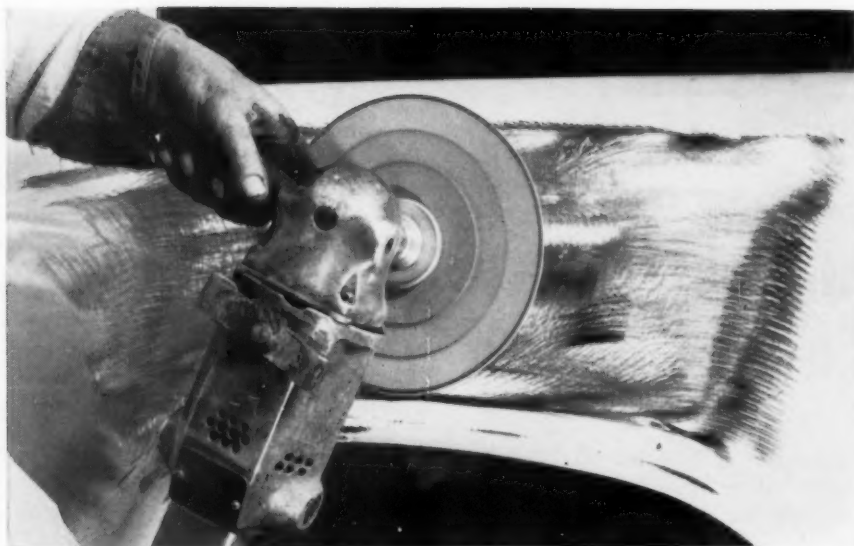
Chevrolet: The engine-driven air compressor is designed for high production. It has a steel liner in a die cast aluminum cylinder block, and a die cast head. The intake uses a reed valve, and the exhaust valve is a disk type poppet. This construction
(Continued on page 84)

Below: Line drawing showing compressor mounted to power steering oil reservoir.



Connecting rod cap on Ford air suspension.





All traces of rust and paint are removed from area to be refinished. Sand down to bright, bare metal.

Refinishing Techniques for the **VOLUME Body Shop**

*Here's an unbeatable "three" combination:
Top equipment, good materials & know-how*

THERE are many factors which contribute toward producing high-quality body refinishing work in the Volume Body Shop. Good equipment is a prime requisite. The use of a high grade, reputable enamel or lacquer is also important, not to mention proper color matching. Clean surroundings. Dust-free atmosphere with proper ventilation in the spray department also help produce a gleaming paint job.

Yet all the points just mentioned would be useless if certain important steps in body metal preparation were not followed. For

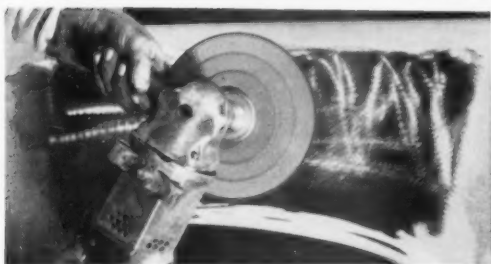
example: Sanding scratches that can still be seen through the finish; a sectional paint job that does not shine as much as the original finish. All may result in word-of-mouth advertising by the customer, but you can be sure that it will be unfavorable.

If your shop has the right know-how in body preparation, as well as in the use of good equipment, paint, etc., you will derive good profits from the individual jobs. You will derive even greater profits in the long run from the increased volume of business

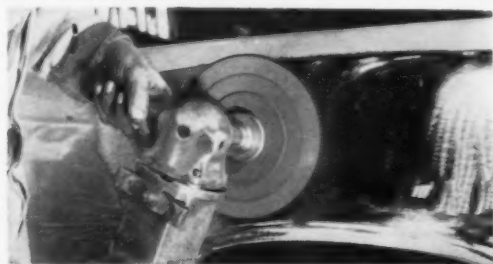
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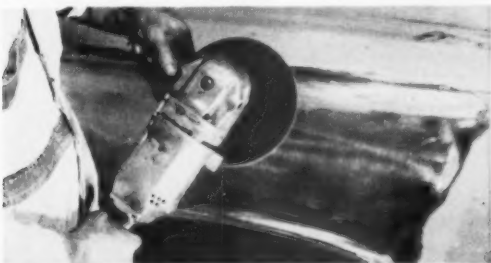
MOTOR AGE Body Shop Story of the Month



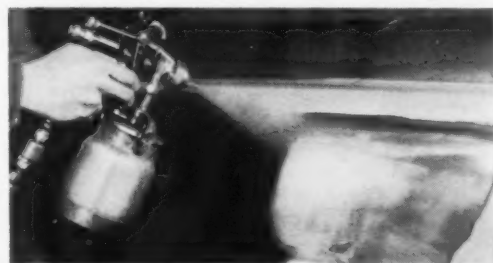
Smoothness of body contours is restored by second sanding. This cuts down welds and smooths surface.



Third sanding conditions the metal. This is done by removing deep scratches with a sanding disk.



Final sanding produces a smooth metal surface. Paint edges are "feathered" before spraying.



After sanding operation, a primer coat is sprayed on. This will give proper bond for a lasting finish.



Primer coat is smoothed with a wet-type sandpaper. Sponge is held above sprayed area while sanding.



Matched color will blend with original color. Hood protected against overspray by using masking tape.



Finishing compound is applied over sprayed area. Buffer is used to bring out deep lustrous finish.



Completed refinishing job is shown. When properly performed, it is difficult to tell where damaged.



Dodge Motor Corp. says that luggage space has doubled during past ten years, backs up its claim with this eye-pleasing threesome. Girls display daisies merely in awareness of the season.

HUMAN EVENTS

Ready for warm weather and the upswing in demand for car air conditioners, American Motors'

J. F. Buck conducts one of a series of air conditioning schools for service personnel of Rambler dealerships.



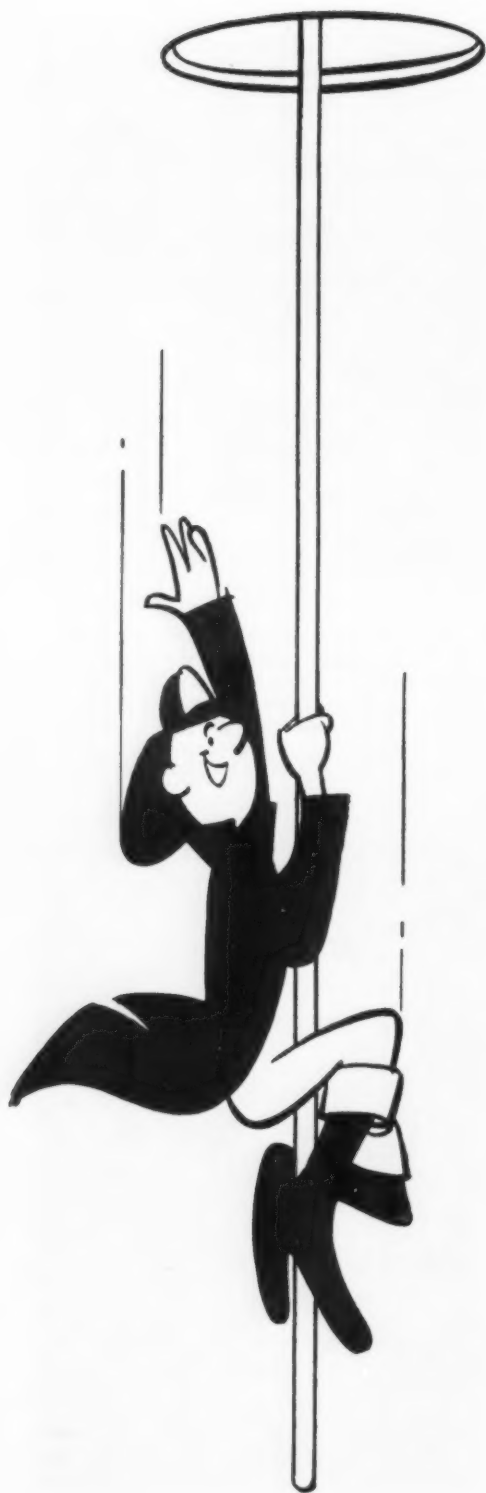
► "Let me in, Saint Peter, I'm Gabriel." Biblical analogy is enacted at Loring, Maine airbase each time Tech. Sgt. George J. Gabriel produces his identification card for Airman Roland Saint Peter, who, naturally, guards the gate.



◀ Six-year-old Mary Hayes, Syracuse, N.Y., 1st grader, poses with the poster that earned her a place among first ten prize winners of American Automobile Association's nationwide School Traffic Safety Poster contest. She is the youngest pupil to achieve this position in contest history.

► San Antonio, Texas' Witte Museum houses many antique automobiles. But only one was graced with poster girl Rosemary Jersig, Sweetheart of the Alamo City Horseless Carriage Club which helps promote the auto collection.





How MOTOR AGE CAME to My RESCUE

*. . . and put out the fire that
was losing me a new car sale!*

Dear Editor:

MOTOR AGE has helped me in many ways in the past, with tune-up data and shop kinks. But to get to the point, MOTOR AGE really came to my rescue in early May, 1958.

As well as being a service specialist my work is selling new and used cars.

On this special day a man came to our place of business, and I mean he was all man, about 6 feet 5 inches tall. He sat in the different new models and of course I tried to take his order for a new car.

He thought maybe one of the competitive automobiles might have more head and leg room and said he would have to look around a little more before buying. I showed him the new April MOTOR AGE with all the different specifications on body data and dimensions. My thanks to MOTOR AGE is in order because 5 minutes later he had signed the order.

Jack Tuffree, Sales Manager
Tuffree Chevrolet Sales
Green Mountain, Iowa

(Mr. Tuffree has won a twenty-five dollar U. S. Savings Bond for his letter. He is the second winner in this year's "How MOTOR AGE Came to My Rescue" contest. Rules of contest appear on page 27.)

Management Clinic



Are You a Good Credit Risk?

HOW does your banker go about sizing you up as a credit risk?

Like many other businessmen, you may know your banker personally. He may hold a mortgage on your home or have lent you money to buy the family car. Even so, you may not know how he judges you financially when you need extra cash.

When you are trying to decide whether you should request a loan, remember that banks are in business to lend money. They want to give you credit—*providing there is a reasonable assurance that the loan will be repaid*. But bankers do not take heavy risks. They must protect the depositors who have entrusted them with the money you want to borrow.

A business loan is made in the belief that it will help the borrower increase the earnings of his business so the loan can be repaid. The banker, therefore, is interested in your sales and seeing how the credit he extends will help to boost them. If the loan is sizeable, your banker will probably require a great deal of information: personal references, balance sheets, income statements and historical details of your business organization.

This information will be sifted and studied to see how you stack up against five different tests—the so-called Five C's. First of all, your banker will want to know about your character and capacity. Are you a depend-

able businessman and reputable citizen in the community? Too, he will check the information supplied by your references and your record of repayment of previous loans. And you can be sure that your capacity for achievement as a businessman will be carefully evaluated. If you don't pass these personal tests, the other three C's make little difference.

Capital comes next. Inexperienced businessmen often expect the bank to provide the lion's share of their financial backing. You probably will not get very far with your loan application unless you are willing to back your own confidence with a personal investment in reasonable proportion to your existing and proposed debt.

Collateral, bankers say, does not make a bad loan good, but it may make a good loan better. Banks do not like to foreclose; they are less interested in the price your inventory, real estate or other assets might bring in a forced sale than they are in your normal ability to repay.

Conditions refer to the influence of business trends in general and the tightness or easiness of credit. Of course, your banker will know a great deal about the economic climate of your community and will be interested in your prospects in relations to it.

Supplying the basic information about
(Continued on page 114)

QUICK ANSWERS to Customers Troubles

BUILDS

Customer Reports

Engine runs too hot — Coolant being lost

*Mechanic
Knows:*

- a. Leaks in hoses, radiator, water pump housing
- b. Leaks in water pump shaft, drain cocks & freeze plugs
- c. Leaks in head gaskets, heater, heater hose
- d. Cracked cylinder block
- e. Defective pressure cap or radiator
- f. Exhaust gas or air displacing coolant
- g. Radiator top baffle blocking core
- h. Radiator after-boil

Engine runs too cool

*Mechanic
Knows:*

- a. Defective thermostat
- b. Temperature gauge incorrect

Engine runs too hot — No loss of coolant

*Mechanic
Knows:*

- a. Defective thermostats in water outlet
- b. Defective intermediate thermostats in water pump bypass
- c. Defective fan belt
- d. Clogged radiator
- e. Water pump impeller worn
- f. Collapsed water hoses
- g. Corrosion in cylinder block
- h. Bugs & dirt lodged on outside of core
- i. Defective water distribution tube
- j. Badly overloaded engine
- k. Defective heat indicator gauge

Hard steering

*Mechanic
Knows:*

- a. Low or uneven tire pressure
- b. Steering gear or connections adjusted too tight
- c. Insufficient lubricant used
- d. Incorrect lubricant used
- e. Excessive caster
- f. Suspension arms bent
- g. Front spring sagged
- h. Frame bent or broken
- i. Steering knuckle bent
- j. Ball joint galled or too tight

Excessive play or looseness in steering

*Mechanic
Knows:*

- a. Steering gear adjusted too loose or worn
- b. Ball joints too loose
- c. Front wheel bearings incorrectly adjusted or worn

Erratic steering on application of brakes

*Mechanic
Knows:*

- a. Oil or brake fluid on lining
- b. Brakes incorrectly adjusted
- c. Front springs weak
- d. Low or uneven tire pressure
- e. Incorrect or uneven caster
- f. Steering knuckle bent

CONFIDENCE and Repeat Business

Mechanics of all ages will find this series of articles a helpful guide in deciding the right steps to take after trouble is reported



Customer Reports

Scuffed tires

*Mechanic
Knows:*

- a. Tires improperly inflated
- b. Toe-in incorrect
 - c. Excessive wheel or tire runout
 - d. Ball joints too loose
- e. Uneven camber
- f. Incorrect toe-out on turns
- g. Arms bent or twisted
- h. Steering knuckle bent
- i. Excessive speed on turns

Cupped tires

*Mechanic
Knows:*

- a. Toe-in incorrect
- b. Tires improperly inflated
- c. Worn ball joints
- d. Wheel bearings incorrectly adj.
- e. Uneven camber
- f. Excessive mileage without rotating tires

Front wheel shimmy

*Mechanic
Knows:*

- a. Low or uneven tire pressure
- b. Wheels, tires out of balance
- c. Brake drums out of balance
- d. Eccentric or bulged tires
- e. Excessive wheel or tire runout
- f. Shock absorbers inoperative
- g. Steering linkage incorrectly adjusted or bent
- h. Steering gear incorrectly adj.
- i. Front wheel bearings incorrectly adjusted or worn
- j. Incorrect or uneven caster
- k. Ball joints too loose
- l. Toe-in incorrect
- m. Steering knuckle bent
- n. Stabilizer shaft inoperative

Front wheel tramp

*Mechanic
Knows:*

- a. Wheels out of balance
- b. Eccentric or bulged tires
- c. Wheel or tire not concentric
- d. Shock absorbers inoperative
- e. Stabilizer shaft inoperative

● represents most common solutions

BODY SHOP TIPS

Tool For Removing Chevy Hood Springs

I have made a hood spring remover for removing hood springs from 1949-54 Chevrolets. Two of these tools are needed for each car when removing the hood. The method of removing is fast and effortless and should be done in the following way: Raise the hood and place one arm of the remover in lower spring hook. Then lower hood about half way, lengthening the spring. Place other arm in upper hook of spring. By raising the hood again it permits complete removal of spring which is held expanded until replaced. *Wayne Woolman, Oklahoma State Tech., Okmulgee, Okla.*

How To Remove Dents In Hard-To-Get-At Places

To remove dents in panels in hard-to-get-at places, drill a small hole for a sheet metal screw. Insert screw and pull with vise grip pliers. Remove screw and solder hole up. Then file and refinish. This has been a proven time-saver. *K. D. K. Body Shop, 725 Court "C", Tacoma 2, Wash.*

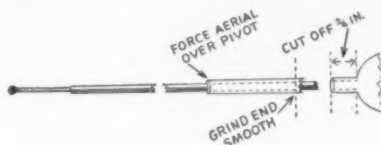
New Way To Remove Rattles In Doors

I have found a way to remove

door glass rattles due to loose and worn channels on hardtops and convertibles. Separate vent frame fabric channel from metal channel on the inside, side of the door. Leave enough space to insert a selected size of brazing rod. *Mel Cialone, Mel's Auto Repair Shop, 417 Broad St., Summit, N. J.*

Repairing Broken Ford Aerials

I have a suggestion that I think will be of some use to garage men. With this idea you



can repair 1955 and 1956 Ford aerials in about ten minutes. Many of these aerials seem to break off about two inches above the insulator where the solid center shaft in the aerial ends. Cut off the aerial shaft with a tubing cutter about $\frac{3}{4}$ inch above the insulator. With a hacksaw split the upper section of the aerial and slide it off the shaft. Take the broken aerial and cut the broken end off smooth. Place it over the solid shaft and drive it on with a hammer and pliers. Clamp vise grip pliers on aerial at first joint.

Take a hammer and drive on top of pliers and aerial will fit snugly over shaft. *Bill Berthold, Bob's Friendly Service, Churchville, N. Y.*

Idea For Replacing Moldings On Wreck Jobs

Quite often two or three pieces of sheet metal are held in place by bolts which pass through the pieces and into a nut either retained or spot welded on the back side of the last piece of sheet metal. After a collision and these pieces are removed to be straightened, it is difficult to replace the bolts because the sheet metal pieces have shifted enough to throw the holes out of alignment. Too much prying with an aligning punch will either burr the threads in the nut or break it loose from its spot welds or retainer. Our method is to use a threading tap of the correct bolt size to run through the holes. This cuts off enough of the over-lapping sheet metal edges in the holes to permit easy starting of the bolts. *Don Baxter, Williams Chevrolet, 1114 10th St., Woodward, Okla.*

BODY SHOP TIPS

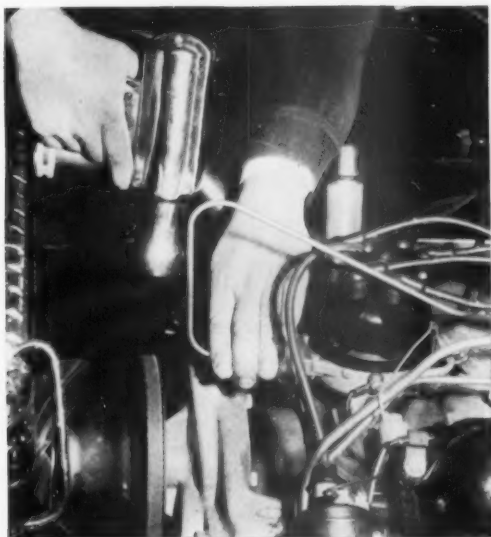
are worth

\$7.50

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

The Volume Shop knows . . .

Weather affects Ignition Timing; Set by instruments not "by ear"



Use timing light and manufacturer's specs.

HE was a good customer, so you did the job carefully. You wanted to get rid of that knock for him, so you checked the carburetor and the cooling system. You listened carefully for trace knock when you set the ignition timing.

And yet—

The next day he came back because the car was again knocking.

"Here's the car you fixed." He stares at you: "Or at least you *claim* to have fixed it."

What went wrong?

Well, if you tuned the car by ear for trace knock as many people do, the chances are you were trying to beat the weather.

"The *weather*? What's the weather got to do with it?"

Weather is a pretty general term. It in-

*An outline of effects
temperature, humidity
and air pressure can
have on car's engine*

cludes changes in from hot to cold, (or the other way around), changes in the outside air pressure, and changes in humidity. These changes that take place outside the engine cause changes within the combustion chamber itself.

Outside Air Pressure

Suppose a car goes up a mountain. The higher the car goes the "lighter" the air is with less air pressure and a smaller quantity of air-fuel mixture gets into the combustion chamber.

It is easy for the engine to burn the mixture and so the intensity of knock is reduced.

In fact, a car that needs a gasoline of 90 octane (the measurement of ability to resist knock) at sea level, will need only 87 octane at a thousand feet. For every thousand feet the car rises, the amount of air-fuel in the combustion chamber is reduced so that the car needs 3 less octane numbers, or, to put it in another way, the octane requirement drops 3 numbers.

Notice that the engine is running more smoothly, but is also developing less power. **HIGH OCTANE NUMBERS MEAN GOOD ANTI-KNOCK, NOT NECESSARILY MORE**

(Continued on page 108)

Mechanical Highlights from

Jimmy Bryan in Belond AP Special, winner of "500".



ALL cars in this year's race were powered with the familiar four cylinder Meyer & Drake engine except for the two V8 Supercharged Novis.

Piston displacement was the same as last year, 256 cu. in. for non-supercharged engines and 171 to 183 cu. in. for supercharged. All of the engines used menthenol-base fuel. The four-cylinder engines used Hilborn fuel injectors. Compression ratios ranged from 12 to 15 to 1.

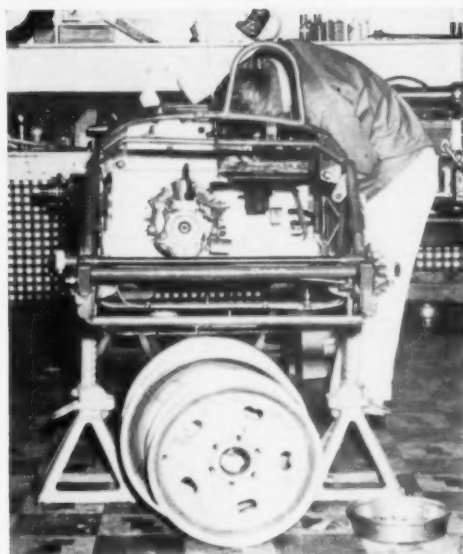
The first and second place finishers both had the engines laying on their side just 18 degrees from horizontal. Geo. Salih, owner, designer and mechanic of the winning car also built the 2nd place finisher. Drivers claim they can go through the turns much faster due to the lower center of gravity.

The Novis both had new engines. The major change was adding dual spark plugs and magneto. All cars were rear drive, equipped with magnesium wheels and spot brakes. Average wheel base was 96 in. Average tread: 50-51 in.

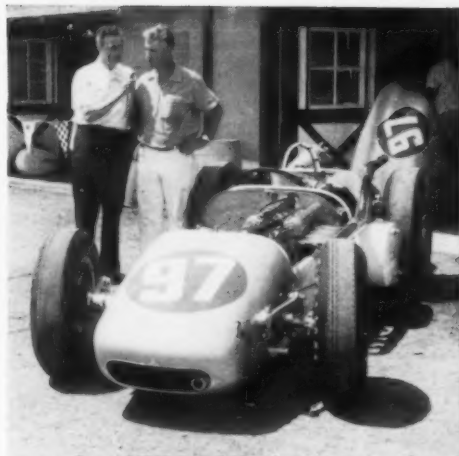


A look at Belond AP Special with the sheet metal removed. Sheet metal can be removed quickly.

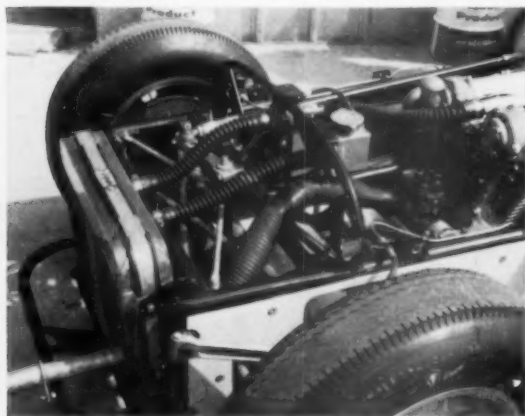
Indianapolis



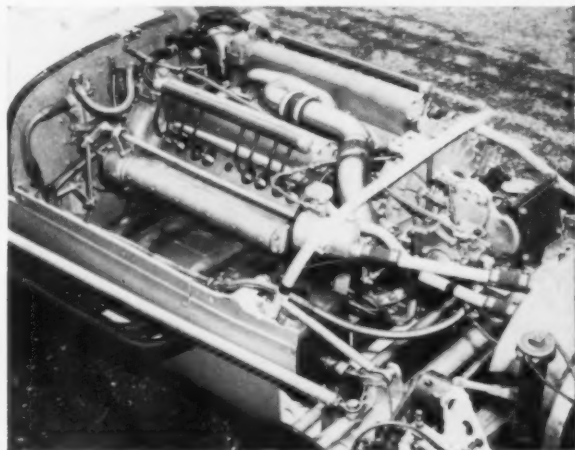
Each car is taken apart and completely checked over before the Indianapolis "500" begins.



Mechanic Floyd Trevis, right, set up car which posted fastest qualifying time of 145.974 mph.



All cars use flexible radiator hoses. This engine uses hose to supply air to cool magneto.



View of powerful super-charged V-8 Novi with dual ignition and two spark plugs per cylinder.



A. J. Watson, mechanic and builder shown making last minute adjustments. Of the three cars he built for race, one holds fastest lap record of 146.508 m.p.h. and one holds four lap record of 145.974 mph.

Pop O'Neill Fills a Prescription

The car was hard to start and tempers hard to keep—only the solution was easy

FARTHER, farther," demanded Doc Whitman flourishing a tongue depressor. "Deygone it, Pop, I mean stick your tongue OUT!"

"Urgle," was about all that Pop O'Neill—garage owner and top troubleshooter of mechanical problems in the town of Glenrock—could muster as an answer.

Pop was having his annual physical check-up. The battered wall clock in the doctor's office said five minutes to ten. Since nine o'clock this morning Pop had had his chest thumped, his ribs poked, his arm jabbed, and a hammer soundly applied to both kneecaps. As a climax, the doctor apparently was readying an all out attack on his throat.

The tongue depressor jabbed deep into Pop's mouth. Squinting down the depressor like a GI peering over his gunsight, the doctor crooned "aha!"

"Awk," sputtered Pop. Mentally he added

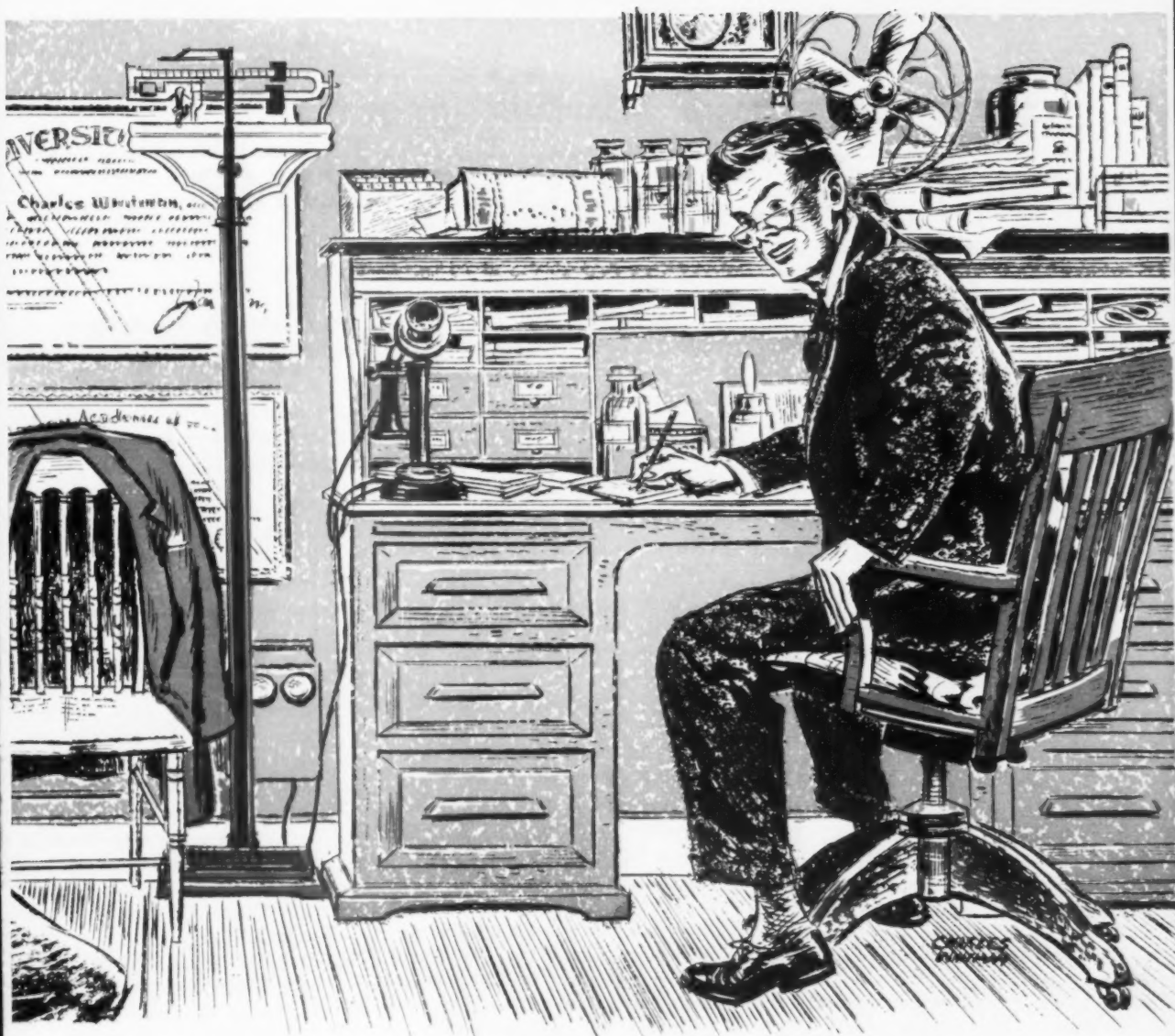


By William H. Wolfe, Managing Editor

a few words, sizzling enough to crack an engine block.

At last the doctor withdrew the tongue depressor and announced: "Examination completed. Put the rest of your clothes back on."

Pop massaged his throat carefully as if to restore his vocal chords. "What's the ver-



"No pharmacy can fill it for you, Pop . . . Only yourself."

dict, Charlie?"

"We'll have to wait for the lab reports for the final verdict. But from what I see this morning I'd say you are in pretty good shape. Heart's good. Blood pressure in line. You might give up 10 or 15 pounds, though. Take it easy on desserts for a month or two and we'll see if that brings your waistline in a bit."

The doctor sat down at his mahogany desk and reached for a prescription pad. He scribbled a few lines, tore off the top blank and handed it to Pop.

"Here's a sort of 'prescription' for you, Pop. It's good advice I read in a medical journal the other day. No pharmacy can fill it for you, only yourself. But living up to it will be good for your system all around."

Pop glanced at the "prescription," smiled to himself and carefully stuffed it into his shirt pocket . . .

When Pop O'Neill arrived at the Shop he found Tommy Winters and Larry Tate—his junior and senior mechanics—well and hearty. Their rate of activity, however,

(Continued on page 76)

SERVICE



SUGGESTIONS

Breaking-In New & Replacement Brake Linings

New or replacement brake linings on Chevrolets need no special breaking-in. However, the first few brake applications may be somewhat erratic. Servicemen may need to stabilize the brakes before delivering the car to the owner. If the brake action is erratic, one acceptable way to seat the brakes is to drag the brakes at 5 MPH. Then full throttle for not over 300 feet—Do Not Repeat.

Too severe a break-in is apt to produce small charred flakes on the lining surface. This will produce a decided pull. If this should occur, the lining surface should be sanded slightly. This removes the flaky build-up. Use only common sandpaper for this purpose. All abrasive particles can be removed with the lining dust by careful use of clean compressed air.

New Plymouth V-8 Engine Valve Cover & Gasket

A new valve cover and gasket entered production late in 1957 for all Plymouth V-8 engines. Tabs have also been added to both the cover and cover gasket. They provide attaching points for the gasket to be stapled to the cover. This assures a fixed position of the gasket during installation.

A bead on the cover flange has been incorporated in the cover. It effectively seals the gasket when the cover bolts are properly torqued. The correct torque specifications for the two end cover bolts is 36 in. lbs. and 20-25 in. lbs. for the center bolt.

To replace the earlier type gasket, staple it to the ends of the cover to secure the gasket in its proper position. This can be accomplished by drilling two $\frac{1}{16}$ in. holes in the cover flange at each end of the cover with the centers $\frac{1}{16}$ in. apart.

Valve Buzz In Transmission Caused By Areated Oil

An abnormally loud and consistent valve buzz may be encountered particularly in park and reverse ranges in Studebaker - Packard's Flightmatic Transmission. In tracing the causes it was, in one case, caused by highly areated oil.

Whenever this buzz is abnormally loud, inspection of the oil on the dipstick will disclose if areation is present. If the oil is heavily areated, it is likely that there is a leak somewhere in the transmission. The most probable points of leakage are: Sand holes or porosity in the transmission case. Leakage between the pressure regulator valve assembly and the machined surface of the case. This can be due to nicks or other damage on either of the mating surfaces, also improper torquing of the cap screws. Leakage between the front pump and the transmission case may be due to a damaged gasket.

Transmission Valve Buzz

Most frequent transmission valve buzz is caused by incorrect control pressures or sticking valves. However, when a check of the oil indicates much areation, then the possibility of a leak should be suspected. A little foam at the top of the oil is not necessarily abnormal.

Correct Way To Remove Chevy Rear Wheel Bearings

The following procedure should be used to remove 1957 Chevrolet passenger car's rear wheel bearings.

1. Use a hammer and chisel. Nick the soft wheel bearing lock ring to stretch the metal. Then remove ring from axle shaft.
2. Support the rear wheel bearing retainer. Knock the four serrated bolts from retainer. It is possible to re-use the retainer, however, new serrated bolts should be used at re-assembly.
3. Slide the bearing retainer down against the axle flange. Install press plate on the axle shaft between bearing retainer and bearing. Then fully close the two plate halves.
4. Press bearing from shaft with press plate parting line supported on press bed.

Proper Way To Clean DeSoto Windshield Washer

As a result of various impurities which enter the system, repeated clogging of the windshield washer nozzles may be experienced. This condition can be corrected by flushing out the system, as follows:

1. Remove the pick-up tube from the Jiffy water bag and insert it into a pan of boiling water (or at least 180°). Approximately one quart of water should be sufficient.
2. Operate the windshield washer foot pump as rapidly as possible. Expel all the hot water out of the nozzle jets.

(Continued on page 97)

1958 Tune-up—Alignment Specifications

MAKE AND MODEL	ENGINE	No. of Cylinders Bore and Stroke (In.)	Maximum Brake H.P.	TUNE-UP DATA								FRONT END ALIGNMENT					
				Spark Plug Make and Size (mm)	VALVES				IGNITION				Steering Axis Inclination (Deg.)	Caster (Deg.)	Camber (Deg.)	Toe-In (In.)	
					Seat Angle	Operating Tappet Clearance		Breaker Point Gap (In.)	Cam Angle (Deg.)	Spark Plug Gap (In.)	Timing ° F. C.						
						Inlet (Deg.)	Exhaust (Deg.)					Inlet (In.)					Exhaust (In.)
AMERICAN MOTORS CORP.																	
Rambler.....	6-5801	6-3 1/2 x 4 1/2	90	ACA-14	45	45	.018C	.018C	.016	32	.035	38	8	1/2 N to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-5810	6-3 1/2 x 4 1/2	127	CA-14	45	45	.012H	.016H	.016	32	.035	58	6° 11'	0 to 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-5820	6-3 1/2 x 4 1/2	215	CA-14	30	45	.012H	.014H	.016	30	.035	58	6° 11'	0 to 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-5880	6-4 x 3 1/2	270	CA-14	30	45	Hyd	Hyd	.016	30	.035	58	6° 11'	0 to 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2
CHRYSLER CORP.																	
Chrysler.....	6-LC1-L	8-3 1/2 x 3 1/2	790	AL-14	45	45	Hyd	Hyd	.017	30	.035	88	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LC2-M	8-3 1/2 x 3 1/2	310	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	1/2 N to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LC3-H	8-4 x 3 1/2	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	68	6 1/2	1/2 N to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LC3-S	8-4 x 3 1/2	380	AL-14	45	45	.015H	.024H	.017	38	.035	68	6 1/2	1/2 N to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
De Soto.....	8-LS1-L	8-4 1/2 x 3 1/2	280	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-LS2-M	8-4 1/2 x 3 1/2	291	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-LS3-H	8-4 1/2 x 3 1/2	335	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-LS3-S	8-4 1/2 x 3 1/2	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	88	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
Dodge.....	6-LD1-L1, LD1-L2	6-3 1/2 x 4 1/2	135	AL-14	45	45	.010H	.010H	.020	39	.035	28	6 1/2	0 to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LD2-L1, LD2-L2	6-3 1/2 x 4 1/2	252	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LD2-M	8-3 1/2 x 4 1/2	265	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LD3-L, LD3-H	8-4 1/2 x 3 1/2	295	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	6-LD2 & LD3, D-500 Package	8-4 1/2 x 3 1/2	335	AL-14	45	45	Hyd	Hyd	.017	30	.035	68	6 1/2	0 to 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
Imperial.....	8-LY1-L, LY1-M, LY1-H	8-4 x 3 1/2	345	AL-14	45	45	Hyd	Hyd	.017	38	.035	68	6 1/2	0 to 1 1/2 P	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
Plymouth.....	6-LP1-L, LP1-M, LP1-H	6-3 1/2 x 4 1/2	132	AL-14	45	45	.010H	.010H	.020	39	.035	28	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-LP2-L, LP2-M, LP2-H	8-3 1/2 x 4 1/2	225	AL-14	45	45	.012H	.018H	.017	30	.035	108	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-LP2-M Fury	8-3 1/2 x 4 1/2	290	AL-14	45	45	.012H	.018H	.017	38	.035	108	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	Golden Commando Package	8-4 1/2 x 3 1/2	305	AL-14	45	45	Hyd	Hyd	.017	38	.035	88	6 1/2	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
FORD MOTOR CO.																	
Edsel.....	8-57A, B; 58A, B; 63A, B; 64A, 76B	8-4 1/2 x 3 1/2	303	Ch-18	30	45	Hyd	Hyd	.015	27	.034	78	7	0 to 1 P	1/2 P to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-57A, 57B, 63A, 63B, 76B	8-4 1/2 x 3 1/2	345	Ch-18	30	45	Hyd	Hyd	.015	27	.034	78	7	0 to 1 1/2 P	1/2 P to 1 P	1/2 to 1/2	1/2 to 1/2
Ford.....	6-All	6-3 1/2 x 3 1/2	145	Ch-18	45 1/2	45 1/2	.019H	.019H	.025	37	.034	48	7 7/8	1/2 P to 1 1/2 P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-Custom 300, Fairlane	8-3 1/2 x 3 1/2	205	Ch-18	45 1/2	45 1/2	.019H	.019H	.015	27	.034	38	7 7/8	1/2 P to 1 1/2 P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-Fairlane 500	8-4 x 3 1/2	265	Ch-18	60 1/2	45 1/2	.026H	.026H	.015	27	.034	38	7 7/8	1/2 P to 1 1/2 P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-Fairlane 500 Optional	8-4 1/2 x 3 1/2	300	Ch-18	60 1/2	45 1/2	.026H	.026H	.015	27	.034	38	7 7/8	1/2 P to 1 1/2 P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-Thunderbird	8-4 x 3 1/2	300	Ch-18	60 1/2	45 1/2	.025H	.025H	.015	27	.034	48	7 7/8	1/2 P to 1 1/2 P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2
Lincoln.....	8-All	8-4 1/2 x 3 1/2	375	Ch-18	29 1/2	44 1/2	Hyd	Hyd	.015	27	.032	68	7° 26' 10"	0 to 1 1/2 N	0 to 1/2 P	1/2 to 1/2	1/2 to 1/2
Mercury.....	8-Monterey	8-4 1/2 x 3 1/2	312	Ch-18	60 1/2	45 1/2	Hyd	Hyd	.015	27	.034	48	7	1/2 N to 2N	1/2 N to 1 1/2 N	1/2 to 1/2	1/2 to 1/2
.....	8-Monarch	8-4 1/2 x 3 1/2	330	Ch-18	60 1/2	45 1/2	Hyd	Hyd	.015	27	.034	48	7	1/2 N to 2N	1/2 N to 1 1/2 N	1/2 to 1/2	1/2 to 1/2
.....	8-Park Lane	8-4 1/2 x 3 1/2	330	Ch-18	60 1/2	45 1/2	Hyd	Hyd	.015	27	.034	78	7	1/2 N to 2N	1/2 N to 1 1/2 N	1/2 to 1/2	1/2 to 1/2
GENERAL MOTORS CORP.																	
Buick.....	6-40	6-4 1/2 x 3 1/2	250	AC-14	45	45	Hyd	Hyd	.015	30	.033	58	7	1/2 N	1/2 P	1/2 to 1/2	1/2 to 1/2
.....	8-60, 60, 70, 700	8-4 1/2 x 3 1/2	300	AC-14	45	45	Hyd	Hyd	.015	30	.033	58	7	1/2 N	1/2 P	1/2 to 1/2	1/2 to 1/2
Cadillac.....	8-60, 62, 75	8-4 x 3 1/2	310 3/4	AC-14	44	44	Hyd	Hyd	.015	30	.035	58	4	1/2 N to 1 1/2 N	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2
Chevrolet.....	6-1100, 1500, 1700	6-3 1/2 x 3 1/2	145	AC-14	31	46	Hyd	Hyd	.019	30	.035	TC	7 1/2	1/2 N to 1/2 P	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-1200, 1300, 1800	8-3 1/2 x 3 1/2	185	AC-14	45	45	Hyd	Hyd	.019	30	.035	48	7 1/2	1/2 N to 1/2 P	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-1200, 1600, 1800	8-4 1/2 x 3 1/2	250	AC-14	45	45	Hyd	Hyd	.019	30	.035	48	7 1/2	1/2 N to 1/2 P	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-867	8-3 1/2 x 3 1/2	230	AC-14	45	45	Hyd	Hyd	.018	29	.035	48	4	2 1/2 P	0 to 1 P	1/2 to 1/2	1/2 to 1/2
Oldsmobile.....	8-68	8-4 x 3 1/2	265	AC-14	45	45	Hyd	Hyd	.016	30	.030	58	7	0 to 1N	1/2 N to 1 1/2 P	0 to 1/2	1/2 to 1/2
.....	8-588, 98	8-4 x 3 1/2	305	AC-14	45	45	Hyd	Hyd	.016	30	.030	58	7	0 to 1N	1/2 N to 1 1/2 P	0 to 1/2	1/2 to 1/2
Pontiac.....	8-58-25, 58-27, 58-28	8-4 1/2 x 3 1/2	240	AC-14	30	45	Hyd	Hyd	.016	30	.036	68	4 1/2	0 to 1N	0 to 1 P	0 to 1/2	1/2 to 1/2
.....	8-58-25, 58-27, 58-28	8-4 1/2 x 3 1/2	255	AC-14	30	45	Hyd	Hyd	.016	30	.036	68	4 1/2	0 to 1N	0 to 1 P	0 to 1/2	1/2 to 1/2
STUDEBAKER-PACKARD CORP.																	
Packard.....	8-58L	8-3 1/2 x 3 1/2	225	Ch-14	45	45	.024H	.024H	.016	31	.036	48	6	1N to 2 1/2 N	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-58L-K	8-3 1/2 x 3 1/2	275	Ch-14	45	45	.024H	.024H	.016	31	.036	48	6	1N to 2 1/2 N	0 to 1 P	1/2 to 1/2	1/2 to 1/2
Studebaker.....	6-58G	6-3 x 4 1/2	101	Ch-14	45	45	.016C	.016C	.020	39	.031	28	6	1N to 2 1/2 N	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-58B	8-3 1/2 x 3 1/2	180	Ch-14	45	45	.024H	.024H	.016	31	.036	48	6	1N to 2 1/2 N	1N to 1P	1/2 to 1/2	1/2 to 1/2
.....	8-58H	8-3 1/2 x 3 1/2	225	Ch-14	45	45	.024H	.024H	.016	31	.036	48	6	1N to 2 1/2 N	0 to 1 P	1/2 to 1/2	1/2 to 1/2
.....	8-58H-K7	8-3 1/2 x 3 1/2	275	Ch-14	45	45	.024H	.024H	.016	31	.036	48	6	1N to 2 1/2 N	0 to 1 P	1/2 to 1/2	1/2 to 1/2

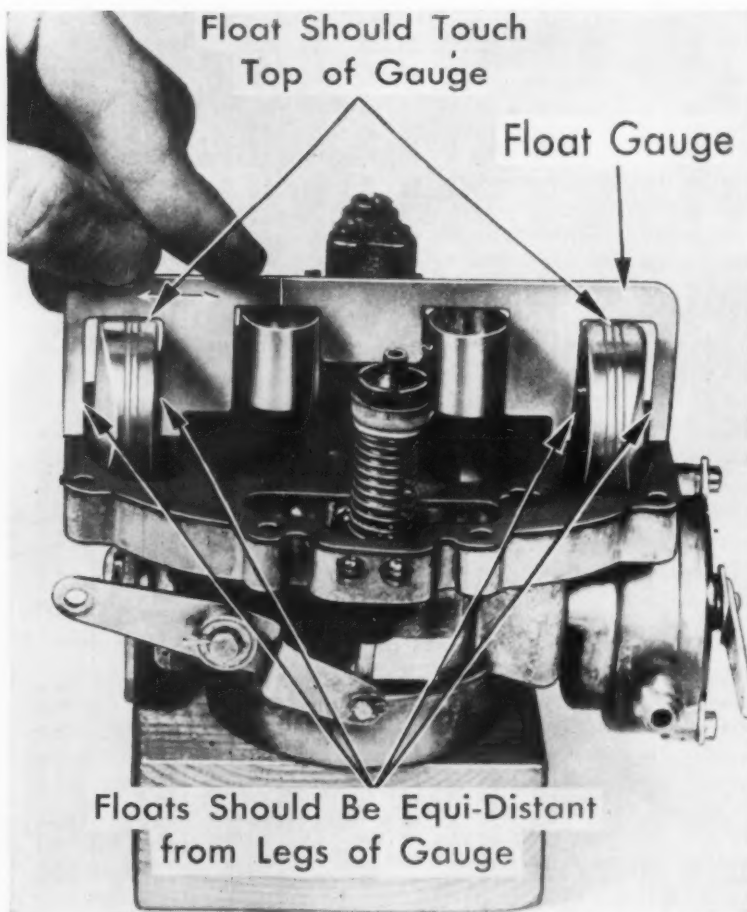
ABBREVIATIONS

Left only; right, 1/2 N to 1/2 P.
 Eldorado models, 335.

AC—A. C. Spark Plug Div.
 ACA—Auto-Lite, Champion or A.C.
 AL—Electric Auto-Lite Co.
 B—Before top center.

C—Cold.
 CA—Champion or Auto-Lite.
 Ch—Champion Spark Plug Co.
 H—Hot.

Hyd—Hydraulic valve lifters.
 N—Negative.
 P—Positive.
 TC—Top center.



How To Set Rochester Carb. Float Level

We are doing a lot of tune-up jobs on late model cars equipped with Rochester four-barrel car-

buretors. We also check the float level when doing a tune-up. How should we set these floats?

Modern Motors,
Phila., Pa.

REMOVE the air horn and turn it up-side down with the gasket in place. Purchase the proper float gauge. Position the gauge on the floats so that the gauge is located against the curvature in the base of the air horn. Bend the float arms at the rear so the floats just contact the gauge. Bend the float arms horizontally until each float is centered between the float gauge legs. Now turn the air horn over and allow the floats to drop in the open position. Measure $2\frac{1}{4}$ inches from the air horn gasket to the lowest point of the floats. Bend the tang at the rear of the floats to correct the adjustments. Repeat the procedure on the other set of floats.

Swapping Hydraulic Lifters With Solids

We have a customer that has a 1958 Ford with a 361 cu. in. motor which is a special order car. The dealers here have no information on this motor. I think it has been in production only two months. It may be the same motor as the small Edsel, but we are not sure. The problem is this. The hydraulic lifters in this car do not function as they should at high rpm. We would like to know if the hydraulic lifters can be replaced with solid lifters from the 352

for troubleshooting



cu. in. motor? Will the cam, lifters and rocker arms for the 352 cu. in. motor fit this motor? If so, will the valve springs be OK as they are?

*Kirk's Garage
Joe Kirk
Polkton, N. C.*

AS far as I can determine your engine is the same as the one used in the Edsel Ranger and Pacer and all the camshaft and parts will interchange. Your present valve springs will be OK. Be careful when installing the solid lifters as they are a selective fit. Try several lifters in each bore, one may fit better than the other. Maximum clearance should be .0045 in. Valve clearance for the solid lifters should be .026 in.



Reader Has Solution To Miss in '55 V-8 Chevy

In two recent issues of Motor Age, I saw the two similar problems concerning '55 V-8 Chevys which are always missing. In both cases they did everything but replace the engines. I have some additional advice to offer which may help the situation. When the engine is cold, it has a rich mixture due to automatic choke. After warm up engine misses, due to improper temperature control of intake manifold. This can be corrected by cleaning cross-over ports (exhaust) on intake manifold. This should correct problem. I've had the same problems on in line engines with heat risers. When in a closed position a heating condition, and when open a lean, or missing condition.

*John Miller
Geneva Radiator Service
Geneva, Ohio*

Pro And Con On Torquing Of Spark Plugs

The subject of proper tightening of spark plugs has been covered in a variety of ways for many years, and opinions vary all across the board. One recent source claims that spark plugs

will pre-ignite unless they are installed with a torque wrench. According to the experience of the Champion Spark Plug Co., this problem of pre-ignition due to incorrect torque has not proven to be true. Champion uses thermo-couples on all their spark plug firing tips to check things like this, and found negligible temperature change at the firing tips of the plugs at 19, 20, 25 and 30 foot pounds of torque. Their recommendations, insofar as Champion Spark Plugs are concerned, are that the plugs be installed reasonably tight—somewhere near the recommended 30 foot pounds for 14 mm. plugs.

*Champion Spark
Plug Company
Toledo 1, Ohio*





NEW PRODUCTS SHOW WINDOW



320. Durable Battery

▲ **The Electric Auto-Lite Company:** A battery designed to eliminate mechanical failure—even under severe service—is being marketed in a sales provoking white case. The unit (entitled Auto-Lite with Power Bond) carries a 50-month guarantee. A specially developed seal welds the Power Bond plates and the case into a "shake-proof" unit. The company claims this prevents failure caused by severe vibration. The seal also prevents

acid leaks. A permanent intercell bond isolates each cell, also maintains higher starting voltage. The company registers each battery in the owner's name with a serial number.

321. Injection Check

▼ **Allen B. DuMont Laboratories, Inc.:** An electronics fuel injection pickup (Type 2909), designed for a rapid overall check of Bendix electronic fuel injection systems, is available for the company's TV-type Enginscope. It reportedly has provisions for simultaneous viewing of both channels found in Chrysler products.



322. Swivel Ratchet

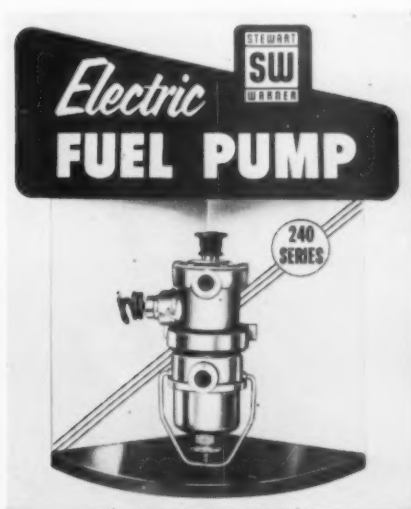
▼ **Bonney Forge & Tool Works:** Released a hinge-handle ratchet designed for use in inaccessible areas. According to the company, the handle permits up to 30-deg. movement in either direction. Other features include a replaceable head unit, and friction action of the handle assembly. Replaceable head unit allows instant repairs.





323. Counter Display

▼ Instrument Div, Stewart-Warner Corp: A three-color counter display stand is available for the 240 Series electric fuel pump. Available in 6- and 12-volt models, the pump is designed for any gasoline engine. Operation is independent of the engine. An adjustable pressure-regulator automatically maintains desired pressure at the carburetor.



324. Fuel Regulator

AC Spark Plug Div, General Motors: A fuel pressure regulator ("Acon-o-Mizer") that reduces idling pressure to 1¾-lbs. has been announced. Mounted between the fuel pump and carburetor, it reportedly halts flooding and stalling, increases engine performance.

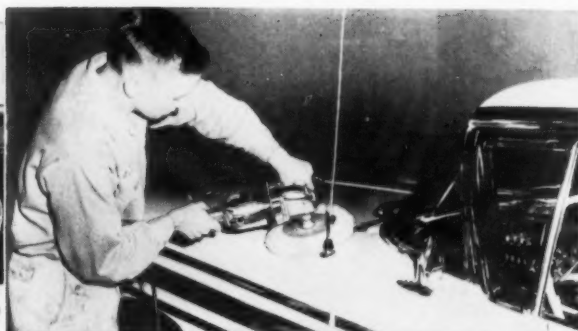
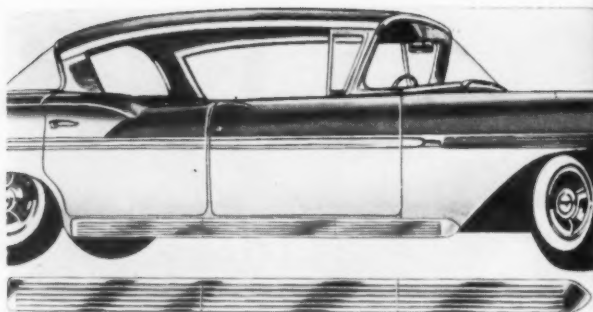
325. Vacuum-Blow Gun

▲ Big Four Industries, Inc: A combination vacuum cleaner and blow gun is offered at a modest price. The hand-size unit has no motor, operates with full venturi action from the regular air compressor. A push button converts the vacuum to a blower for dislodging dirt. Weight: 2½-lbs.

326. Crankcase Filter

▼ Purolator Products, Inc: Announces a crankcase vent filter replacement for late model Ford products. The company claims it allows proper air circulation. Also protects the fuel pump, prevents oil waste and oil fumes from escaping. A change is recommended every 5,000-mi.
(Continued on page 68)





New Products . .

327. Dye Inspection

Magnaflux Corp: Non-flammable, dye-penetrant inspection materials (entitled Spotcheck) are offered in either pressure-spray cans or bulk. The dyed spray is designed to reveal cracks, seams, cavities, other surface defects. The company claims the penetrant is non-toxic, but advises reasonable ventilation.

328. Valve Lifters

► **McQuay-Norris Mfg. Company:** A complete line of Zero-Lash hydraulic valve lifters has been added to the company's valve train product lines. The lifters offer a combination check-valve-spring and retainer housing, which assures instant closing of lifter-check valve. The bottom of the tappet is Parko-lubricized for initial run-in production.

329. Replacement Panel

▲ **Graboski Industries, Inc:** Rocker panel moulding, a stainless steel replacement panel, is offered for installation below car doors. The company reports the ribbed panel resists rust, gravel, salt, both climate and road conditions. Designed for both new and older cars, also long and short models.

330. Lubricam SL-2

Standard Motor Products, Inc: Offered is Lubricam SL-2, a durable lubricant for the distributor cam. Packaged in long-nozzled tubes, it contains silicone which reportedly prolongs effectiveness. It is recommended for distributor plate pivot pins, and ball bearings under heat conditions.

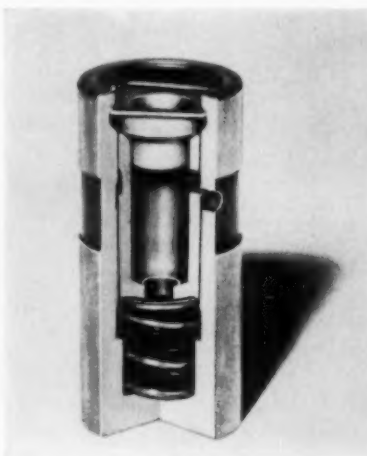
331. Electric Polisher

▲ **Thor Power Tool Company:** Released a relatively high-speed electric polisher (Thor EL-91) with a special air backing pad. According to the company, the pad facilitates shining long, angular body ridges and chrome work of late model cars. A rubber bumper guard protects both chrome and body parts.

332. Foreign Car Tires

The Firestone Tire & Rubber Company: Both white and black sidewall tires are available for 95 per cent of foreign cars. According to the company, eight sizes of the tubeless variety are produced at its Akron and Los Angeles plants. Design is similar to American cars' original equipment tires.

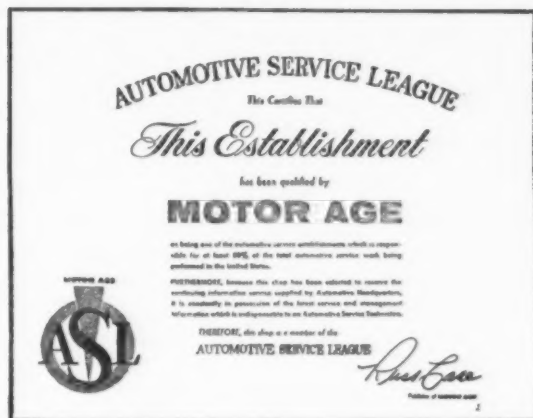
(Continued on page 70)



You Are Qualified to be a Member Of The Automotive Service League

This is a new and unusual organization open to all automotive service shops which have been qualified by Motor Age. If you haven't done so before, detach and return the postage free postcard below.

[The second and lower postcard is for more new product information.]



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PRODUCTS**

To MOTOR AGE

Please send me our membership plaque in the **AUTOMOTIVE SERVICE LEAGUE**.

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There are full time mechanics at our location.

Your Company

Your Name Your Title

Address (City) (Zone) (State)
(Street & No.)

Frank P. Tighe, EDITOR MOTOR AGE
P.O. Box 102, Village Station, N. Y. 14, N. Y.

7/58

Please send me further information on the New Products, the code numbers of which I have circled below. (Be sure to circle the code number).

320	321	322	323	324	325	326	327	328	329
330	331	332	333	334	335	336	337	338	339
340	341	342	343	344	345	346	347	348	349
350	351	352	353	354	355	356	357	358	359

[Postcard valid for 90 days only.]

Your Name Your Title

Your Company

Your Business: Wholesaler Repair Shop Car Dealer

Address (City) (Zone) (State)
(Street & No.)

New Literature

333. Patch Profit Kits

Dill Mfg. Company: Published a folder describing profit kits containing chemical patches, which are defined as nylon-reinforced and self-curing. According to the folder, the kits enable a dealer to show a sizeable gross for a minimum investment. Illustrated are three kits which offer assortments for tubeless and tube repair; also for larger tube repair or a combination assortment. Another section covers the self-curing chemical fluid and a scraping-stitching tool.

334. Spark Plug Manual

The Electric Auto Lite Company: Announced publication of a 32-page spark plug service manual. The illustrated book covers ten basic spark plug features for all cars. Also a detailed description of spark plug service and installation. Other coverage includes: how to service ignition system and the plug's function; modern 2- and 4-cycle engine operation; determining spark plug heat range; solutions to basic fouling problems; spark plug construction; and information of the company's power tip plugs.

335. Management Guide

Independent Garage Owners of America (assisted by Motor and Equipment Wholesalers Assoc.): IGOA's revised "Successful Management Development" manual for the retail service trade is available at a modest price. The 37-page book is reportedly a timely business guide for the automotive maintenance industry. It is said to cover all phases of repair business. Chapters include "Fundamentals for Success and Profit; Analysis of Independent Garagemen's Business Costs; Reducing Cost of Parts Procurement for Maintenance Industry."

336. Carburetor Book

Pennsylvania Refining Company: Published an illustrated pocket-size handbook entitled "Know Your Carburetor." The 46-page booklet describes the functions of a carburetor in non-technical terms; also its parts and solutions to common problems. Emphasized are carburetor care and on-the-engine cleaning. Another section is devoted to fuel injection.

337. Masking Problems

Dutch Brand Div., Johns-Manville: Body shop owners can obtain a 4-page folder that provides economical solutions to masking problems. Title: "How to Get Better Looking Repaint Jobs in Less Time." Folder describes crepe back masking tape designed for curves; flat back masking tape for tasks requiring strength; and hi-temp masking tape that strips clean, even at 250-deg.

338. Foreign Car Hoist

Globe Hoist Company: An instruction manual, "Lifting
(Continued on page 100)

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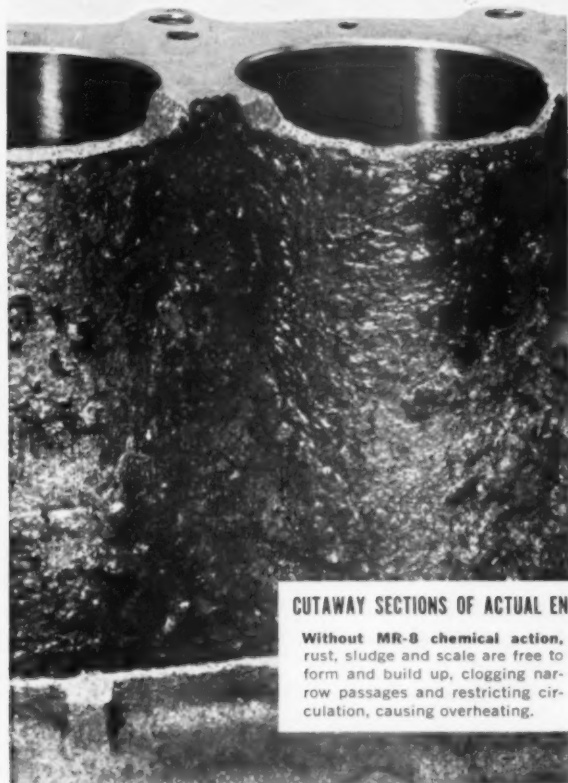
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New York 14, N. Y.

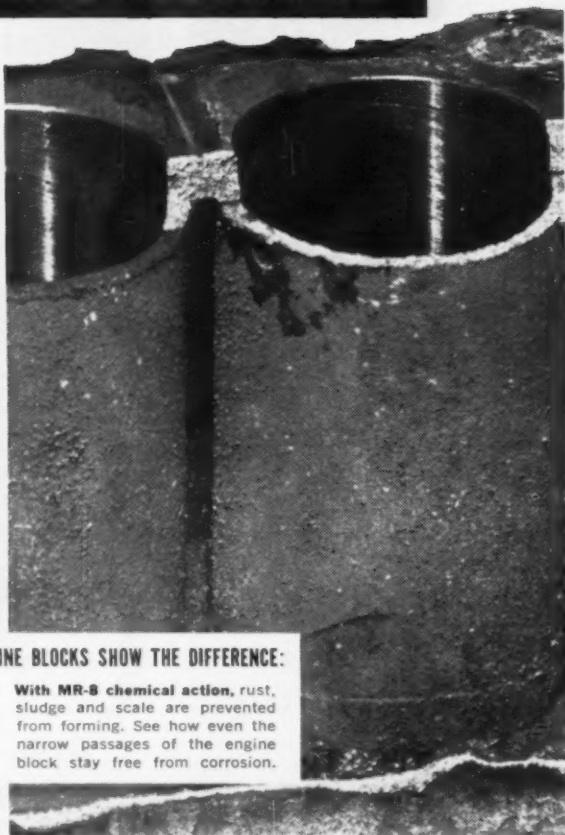
Readers Service Dept.

GIVE YOUR CUSTOMERS THIS ASSURANCE



CUTAWAY SECTIONS OF ACTUAL ENGINE BLOCKS SHOW THE DIFFERENCE:

Without MR-8 chemical action, rust, sludge and scale are free to form and build up, clogging narrow passages and restricting circulation, causing overheating.



With MR-8 chemical action, rust, sludge and scale are prevented from forming. See how even the narrow passages of the engine block stay free from corrosion.

Du Pont ZEREX® Anti-freeze With MR-8 Keeps Entire Cooling System **CHEMICALLY SAFE!**

"Zerex" with MR-8 gives the *chemical protection* from rust and corrosion—as well as from freezing—your customer expects from a Du Pont anti-freeze.

Chemical Armor for Entire Cooling System

MR-8 is Du Pont's special rust inhibitor that keeps the entire cooling system Chemically Safe. Molecules of MR-8 react chemically with molecules of the surface metal of the cooling system to form a "chemical armor" that protects against rust and corrosion.

Because MR-8 has this chemical attraction to metal, it penetrates any rust already present in the cooling system to form its chemical protection underneath and stop further corrosion. In addition, "Zerex" will not rot rubber radiator hose, and it works in all types of water.

So recommend the anti-freeze that will give your customers the safest, surest protection: Du Pont "Zerex" with MR-8.

**AND HERE'S YOUR
BIG DRAWING CARD**



Better Things for Better Living
... through Chemistry

GUARANTEED ANTI-FREEZE PROTECTION

Now, for the first time, you can offer Guaranteed Anti-freeze Protection with Du Pont "Zerex".

You stand to make more profits because this program:

- Promotes early winterizing service—you won't lose business from first-freeze jam-ups!
- Increases station traffic... brings you more new customers!
- Builds valuable repeat-customer business!
- Is the best way to meet cut-rate competition!

And Du Pont will promote "Zerex" and Guaranteed Anti-freeze Protection this fall with powerful national advertising as well as supplying tie-in material for your use. Get details from your supplier now!

Those Left Field Fences

"With kids between the ages of nine and twelve," McGovern said, "it's remarkable how skillful they become no matter where the game is played. One thing about this game, it's the same everywhere, with all parks built to the same size.

"The base lines measure sixty

feet, the foul lines 200 and the center field fence is 212 feet away. No complaints here about parks with short left fields."

Lunch broke up without a single mention of Memorial Cow Pasture in Los Angeles. A taxi ride uptown, another luncheon was coming to a close. In this group were M'sieu Jacques God-

det, Directeur General of the Paris sports daily, "L'Equipe," and M'sieu Paul Emile Victor, head of the French Polar Expedition conducting researches in connection with the International Geophysical Year.

The Sporting View

M'sieu Victor's field seems slightly foreign to sports and baseball bewilders him, yet he has the sporting approach. He was telling about measurements made by taking soundings of the Greenland ice cap where the ice freezes to a thickness of 12,000 feet.

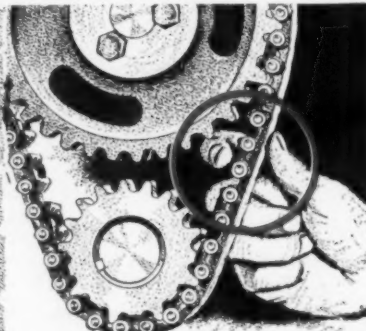
"The ice cap measures," he said, "700,000 cubic miles. Now, I see from your expressions this means nothing, so I have calculated it another way. As you know, the world population is two and a half billion. Now, in order to use up the ice cap, we would have to deliver to every person in the world two tons of ice every minute for a year.

"Ah, you are about to ask how much Scotch you would need to use up the ice in Scotch-on-rocks, and I have calculated that. That quantity of Scotch, if poured into the sea, would raise the oceans of the world thirty feet and flood out every harbor—a lovely fate."

© 1958 New York Herald Tribune Inc.

TIMING TIPS

from LINK-BELT



1. FINGER-GRIP TEST—Remove timing chain cover and crank engine to get all slack on one side of chain. Using thumb and index finger, grip the slack side of the chain midway between the two sprockets. Move chain in and out toward center line of sprockets. More than a 1/2-in. lateral movement indicates worn chain.



2. FINGERNAIL TEST—Run your fingernail across face of sprocket teeth. If nail catches, sprockets are worn and should be replaced.

**EASY TWO-PART TEST TELLS
YOU WHEN TO REPLACE TIMING
CHAIN AND SPROCKETS**

As a standard step in every overhaul, install new Link-Belt timing chain and sprockets. It's easy while the engine is down and may be the difference between a perfect job and one that may cause trouble later.

And don't forget that the service

life of a new timing chain is shortened when it is installed over worn sprockets. Install *both* to prevent early timing lag that results in poor engine economy, burned valves, loss of compression, excessive oil consumption.



Be sure to install *Link-Belt* timing chain and sprockets—world's finest original equipment line—available in sizes for every engine designed for timing chain.

LINK-BELT

TIMING CHAINS AND SPROCKETS

LINK-BELT COMPANY: 220 S. Belmont Ave.,
Indianapolis 6, Ind.
Offices in Principal Cities. 14,780



Chilton's MOTOR AGE, JULY, 1958



Charleston is the first chartered IGO Unit for the state of South Carolina. It bears the name "IGO of Greater Charleston" and has a membership of 25 garage owners. Above are some of the IGO officials—local and national—at the Charleston organization meeting: Left to right, C. D. Bedenbaugh, executive secretary, IGO of Georgia; W. E. Merrill, secretary IGO of Greater Charleston; H. E. Coleman, treasurer, IGO of Greater Charleston; W. Athell Yon, president, IGO of Greater Charleston; Ralph James, executive director IGO of America; and M. W. Crosby, Jr., vice president, IGO of Greater Charleston.

Tennessee Chapter Formed in June

At a meeting held June 7 in Nashville, Tenn., the IGO of Tennessee chapter was formed. Representatives from Kingsport, Chattanooga, and Nashville met. They adopted by-laws and a constitution. Also elected officers and set the date of their next meeting—October 4.

Officers for IGO of Tennessee include: W. C. Wilder, president; Bob Powell, vice president; and Floyd Reed, secretary-treasurer.

These officers are also members of the board of directors.



Other directors chosen were A. L. Peters, Joseph Laughlin, Lee Blanton, H. M. Keedy, and Mr. Hendrix.



Chilton's MOTOR AGE, JULY, 1958

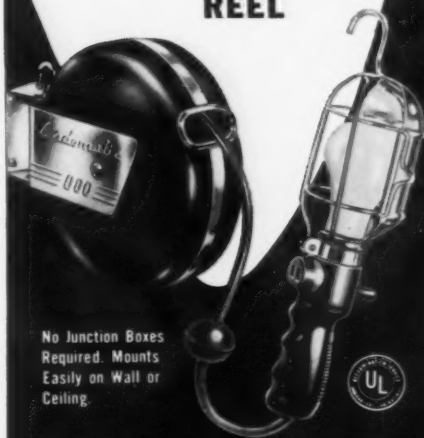
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REEL**

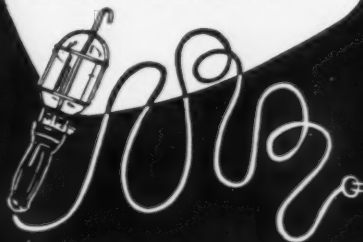


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A Great New Line of *VALVE SEAT INSERTS*

**Precision-Engineered... Performance-Tested...
COLOR-KEYED for Instant Identification!**

RED for original equipment and heavy duty service

BLUE for special heavy duty service

GREEN for engines without valve seat inserts

High quality PERMITE Valve Seat Inserts, used by vehicle manufacturers as original equipment, are now available for replacement service! Produced in three types of alloy to meet all engine applications, the *color-coat* tells instantly which is right for the job. Last two digits of the part number indicate dimension, and all inserts with the same last two digits are interchangeable. Think what valuable time this can save! What's more, a PERMITE insert is free from dust, dirt, rust and corrosion when you use it—it's hermetically sealed in a plastic bag!

 **permite "RED-CM"**

(I-7000 Series) The "Red-CM" (Chrome Molly) Insert, coated bright red on the outside diameter. These are used as original equipment, and are also recommended for heavy duty service in engines where operating conditions are severe.

 **permite "BLUE-CC"**

(I-3000 Series) The "Blue-CC" (Chrome Cobalt) Insert, coated blue on the outside diameter. These are used in engines originally equipped with this type insert.

 **permite "GREEN-M"**

(I-1000 Series) The "Green-M" (Molly) Insert, coated dark green on the outside diameter. These are recommended for engines not originally equipped with inserts.

Completely Catalogued Numerically and by Year and Make of Vehicle, with Installation Instructions, Progressive Size Chart, Interchange List and Suggested Counterbore Cutters.

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Permitem preferred

by vehicle manufacturers / car and truck dealers / garage and service men / fleet operators

Pop O'Neill Continued from page 61

promised no danger of any physical breakdown from overwork.

"Hey, Pop," called Larry as he speeded up action on a lug wrench. "Doc Whitman called. Says you left too early. He had trouble starting his car. Got a push from a neighbor and finally got going again but

wants us to take a look at his car. Says it will be in stall number 3 of the hospital parking lot until one."

Pop dispatched Tommy with road service equipment to check the doctor's car over. In 45 minutes Tommy was back. "Starts fine now. Only needed new points and condensor from what

I could find."

The rest of the morning the O'Neill staff was kept busy on the usual high volume of business with several "rush" jobs mixed in. After the lunch break, Pop started to look over some invoices when the telephone on his desk jangled.

It was Doc Whitman. Pop could tell immediately—without the aid of any clinical thermometer—that the doctor was hot both under and outside the collar.

"I thought you people fixed this car! It won't start! I got one wheeze out of it. That's all. If I grind anymore on the starter I'll be writing out a death certificate for this battery."

Pop tried to interpose a few syllables but the doctor steamed on.

"And I have patients waiting. Young Howie Roushell has all the symptoms of appendicitis. Will Dauber throw out his back again. What am I supposed to do? Take the hospital ambulance for my house calls?"

"Hold your tonsils, Charlie," soothed Pop finally getting a word in. "I'll send out Larry with my car for you to use. Tommy will drive the wrecker and between it and Larry, they'll bring your own car here for us to checkout."

Two moonshiners were discussing their operations. "When I take the stuff into town," said one, "I always drive slow—about 20 miles an hour."

"Skeered of the law?" jeered the other.

"Nope," said the first, "Ye gotta age the stuff, hain't ye?"

Mollified, the doctor tuned down his protests several decibels. But still muttering complaints like a departing summer thundershower, he finally signed off.

"Well, well," whistled Pop. "The doctor seems a bit worked

(Continued on page 78)

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AIRPOWER THAT BUILDS PROFITABLE SALESPower FOR YOU!



**DEEP COOLING
FINS**

... provide extra cooling capacity



**AUTOMOTIVE TYPE
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... assure greater operating efficiency and longer service



**CONSTANT LEVEL
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COMPRESSORS



WOMEN EXPLORERS

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And women explorers aren't alone in this preference. In fact, the surveys of three different national magazines proved that all America names Delco as its No. 1 battery preference. It figures. Delco Dry Charge batteries offer the freshest power money can buy and they are backed by General Motors warranties that are good all over the United States and Canada, too. That isn't all. Delco supports your sales efforts with the strongest advertising in the battery business—full page ads in *Life*, *Look*, *Post*, and *Reader's Digest*—plus the *Lowell Thomas Newscast* on radio. Even if your customers aren't explorers, they'll seek out the dealer who handles Delco. Like we said before: It's easier to *sell* Delco DC, because more people *know* Delco DC.

*Quality built by Delco-Remy
distributed nationally through*



General Motors leads the way—Starting with Delco Batteries

Pop O'Neill Continued from page 76

up." As good as his word, Pop dispatched Larry and Tommy to the hospital parking lot. A short while later, Larry appeared behind the wheel of the doctor's car with Tommy a few yards behind in the wrecker.

Climbing down from the cab, Tommy observed: "Doc's car only needed a good push to get running. Don't know why my new points and condensor didn't do the trick."

Larry wasted no time in talk but raised the hood of the doctor's car—a 1953 DeSoto with

stick shift. After checking and tightening all connections, Larry hopped into the front seat and jiggled the ignition switch. The DeSoto's engine sprang into life.

But when he cut the switch and tried to re-start the car, no response. Tommy came over about this time and watched as Larry removed the distributor cap to test for spark.

Tommy saw the spark and quickly shouted: "Hey, the trouble must be in his coil because we know it's not between the distributor and the plugs."

"Maybe," said Larry a bit thoughtfully. "Anyway, we can test the coil and see."

Pop sauntered over at this last remark. "Hold on, Larry, think again of what you just said."

Larry paused . . . "Doggone, Pop. Of course. If we are getting spark at the distributor then the coil should be all right also" and he accepted the jumper wire Pop held out to him. Then Larry hitched the jumper between the battery and the coil.

When Tommy turned the ignition switch this time the DeSoto caught right off and purred

profitable POWER

unequaled
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ELECTRIC
SIZE 4U-SD**

Cut 90% from nut running time with this powerful electric Impacttool that makes the toughest jobs easy. Drill, ream, tap, saw holes, drill masonry—in fact, do any of 11 multi-purpose jobs with this one amazing tool. Ask your I-R Jobber how the low-cost, multi-purpose 4U-SD will add 25% to your service capacity.

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5 SIZES IN ELECTRIC IMPACTTOOLS
8 SIZES IN AIR TOOLS**

like a kitten loose in a creamery.

"What do you know?" said Larry. "That darn little combination ignition-starter switch."

"I think I'll agree with you on that one," said Pop. "On this type of combination switch, part of it can go bad at times. It is possible to have contact with the ignition only to lose contact when the switch is turned all the way to the right to operate the starter.

"I guess I got suspicious when the car would sometimes start with the switch. When it wouldn't, a good push did the trick."

About four o'clock that after-

noon Doc Whitman drove in behind the wheel of Pop's blue sedan.

"Car rides like a charm," he chimed. "Sorry I blew up a bit over the 'phone. Will Dauber's back is 'back in again' and young Roushell's 'appendicitis' was nothing more than too much birthday cake. Seems it was to be a surprise tomorrow, but young Howie found the cake and instituted his own celebration today."

Pop laughed and told the doctor that he understood about the "slight blow-up." Pop handed him the keys of the DeSoto, explained what had been the trou-

ble, and reassured him that a check of the battery had shown no "danger of death" from the afternoon's incident.

"Oh, and one thing more, Charlie." Pop fumbled with his shirt front and held out a piece of paper. Pop's eyes had a suspicious twinkle as he said: "Might like to make out a copy of this for yourself and send me back the original."

The doctor glanced at the paper—his own "prescription" of that morning. Ruefully he read: "Today, troubles large or small will not throw me. Life's too short to keep in a perpetual stew."

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1/2" DRIVE

AIR

SIZE 403B

Handle all but the very largest nuts on cars and trucks with the lightweight 403B Impactool. The 403B—which weighs only 5 lbs.—is the most powerful tool of its size—a Select-Air regulator permits control for safe use on small jobs—an air compressor as small as 1 1/2 hp will operate this tool. Compact design lets 403B fit into close quarter jobs, reduces operator fatigue. See your I-R Jobber for a convincing demonstration.



18-741-1

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STARTING SERIAL NUMBERS, U. S. PASSENGER CARS, 1950-1958

YEAR	MODEL	STARTING SERIAL NUMBER	LOCATION
BUICK			
1950	All	15,360,001; 25,370,001; 35,374,001; 45,380,001; 55,385,001; 65,393,001; 75,397,001. (See Note A.)	Left front door hinge post.
1951	All	16,031,001; 26,050,001; 36,055,001; 46,061,001; 56,070,001; 66,075,001; 76,080,001. (See Note A.)	Left front door hinge post.
1952	All	16,436,001; 26,455,001; 36,464,001; 46,471,001; 56,483,001; 66,490,001; 76,494,001. (See Note A.)	Left front door hinge post.
1953	All	16,740,001; 26,765,001; 36,774,001; 46,783,001; 56,799,001; 66,805,001; 76,815,001. (See Note A.)	Left front door hinge post.
1954-55	All	First figure indicates the Model; 4 for 40 Special, 5 for 50 Super, 6 for 60 Century, and 7 for 70 Wildcat. Next figure indicates the Year. The following six digit figure indicates the consecutive unit number beginning each year with 001,001. (See Note A.)	Left front door hinge post.
CADILLAC			
1950-57	All	First four digits indicate the Year and Model. The following 5 or 6 digit figure indicates the consecutive unit number beginning each year with 00,001.	Left front door hinge post.
1958	All	First two digits indicate the Year. Next letter indicates the body style. The following 5 or 6 digit figure indicates the consecutive unit number beginning each year with 00,001.	Left front door hinge post.
CHEVROLET			
1950-52	All	First digit indicates the assembly plant. Next two letters indicate the Model; 1500-A, 1500-B, 1500-C, 1500-D, 1500-E, 1500-F, 1500-G, 1500-H, 1500-I, 1500-J, 1500-K, 1500-L, 1500-M, 1500-N, 1500-O, 1500-P, 1500-Q, 1500-R, 1500-S, 1500-T, 1500-U, 1500-V, 1500-W, 1500-X, 1500-Y, 1500-Z. Next letter indicates the month of assembly. Next four digit figure indicates the consecutive unit number beginning each year with 1,001.	Left front door hinge post.
1953-57	All	First digit indicates the Model; 1500-A, 2100-B, 2400-C, 2924-E. Next two digits indicate the Year. Next letter indicates the assembly plant. Next six digit figure indicates the consecutive unit number beginning each year with 100,001. Models with first letter preceded by the letter "V" indicates 8 cyl. engine.	Left front door hinge post.
1958	All	First letter indicates the Model; 1100-A, 1200-B, 1500-C, 1600-D, 1700-E, 1800-F, 800-J. Next two digits indicate the Year. Next letter indicates the assembly plant. Next six digit figure indicates the consecutive unit number beginning each year with 100,001. Models with first letter preceded by the letter "V" indicates 8 cyl. engine.	Left front door hinge post.
CHRYSLER			
1950	C-48 Royal C-48 Sunbeam C-48 Town & Country C-48 Imperial C-50 Crown Imperial	65,004,001; 70,055,001. 67,011,001; 70,194,001. 67,741,501. 7,119,501. 7,411,501. 7,146,001. 7,613,501.	Right front door hinge post.

DODGE—continued

1951	D-41 Wayfarer D-42 Meadowbrook, Coronet...	37,135,001; 43,005,001; 45,506,001. 31,683,001; 45,079,001; 45,518,001.	Left front door hinge post.
1952	D-41 Wayfarer D-42 Meadowbrook, Coronet...	37,175,001; 48,009,901; 48,507,801. 31,687,801; 45,090,601; 45,527,501.	Left front door hinge post.
1953	D-46 Meadowbrook D-47 Meadowbrook D-48 Coronet D-49 Coronet	32,042,001; 45,102,001; 45,536,001. 37,212,001; 48,013,001; 48,511,001. 38,500,001; 41,500,001; 42,500,001. 38,500,001; 46,500,001; 47,001,001.	Left front door hinge post.
1954	D-51 Meadowbrook & D-52 Coronet D-53-1 Meadowbrook; D-50-2 D-53-2 Coronet; D-53-3 Royal D-54-1 Coronet; D-55-2 Royal D-55-3 Custom Royal	32,192,901; 32,190,001; 45,105,801; 45,110,001. 32,227,001; 48,015,001. 34,635,801; 34,642,001; 42,503,001; 42,510,001. 38,525,001; 47,003,001. 32,192,001; 48,016,001. 34,740,001; 42,515,001.	Left front door hinge post.
1955	D-56 Coronet D-57-1 Coronet; D-58-2 Royal D-59-1 Coronet; D-59-2 Royal	32,227,001; 48,016,501. 34,972,001; 42,606,001.	Left front door hinge post.
1956	D-62 Coronet D-63-1 Coronet; D-63-2 Royal D-63-3 Custom Royal; D-500	32,255,001. 35,172,001; 42,620,001. 37,240,001; 38,001,001; 38,535,001; 45,540,001.	Left front door hinge post.
1957	D-67-1 Wayfarer D-67-2 D-500 D-67-3 D-500	37,240,001; 45,540,001. LD1-1,001; LD1M-1,001. LD2-1,001; LD2M-1,001.	Left front door hinge post.
1958	LD1-1 Coronet LD2-1 Coronet; LD2-M Royal; D500 LD3 Custom Royal, Sierra; D-500	LD3-1,001; LD3L-1,001; LD3N-1,001.	Left front door hinge post.
EDSEL			
1958	All	First letter indicates the engine and Model: W for Ranger and Pacer; X for Corsair and Citation. Next digit indicates the Year. Next letter indicates the assembly plant. Next six digit figure indicates the body style. Next six digit figure indicates the consecutive unit number beginning each year with 700,001.	Left front door pillar.
FORD			
1950-51	All	First letter indicates the engine. Next digit indicates the Year. Next two letters indicate the assembly plant. Next six digit figure indicates the consecutive unit number beginning each year with 100,001.	Right frame side rail opposite the engine and on dash panel under the hood.
1962	All	First letter indicates the engine. Next digit indicates the Year. Next two letters indicate the assembly plant. Next six digit figure indicates the consecutive unit number beginning each year with 100,001.	Right front door pillar.
1963-68	All	First letter indicates the engine. Next digit indicates the Year. Next letter indicates the body style. Next six digit figure indicates the consecutive unit number beginning each year with 100,001.	Left front door pillar.

1951	C-51-1 Windsor DeLuxe	68,097.001; 70,081.000
	C-51-2 Windsor DeLuxe	68,097.001; 70,081.000
	C-52 Saratoga	68,500.001; 70,500.001
	C-53 Imperial	7,786.501
	C-54 Imperial	7,814.501
1952	C-51-1 Windsor	67,008.901; 70,094.301
	C-51-2 Windsor DeLuxe	67,033.301; 70,852.301
	C-55 Saratoga	68,501.001; 70,501.001
	C-52 New Yorker	7,198.901
	C-53 Crown Imperial	7,248.901
	C-53 Crown Imperial	7,815.101
1953	C-50-1 Windsor	68,011.001; 70,110.001
	C-50-2 Windsor DeLuxe	67,040.001; 71,005.001
	C-56-1 New Yorker	68,508.001; 70,540.001
	C-56-2 New Yorker DeLuxe	68,001.001; 7,222.001
	C-58 Imperial	7,765.001
1954	C-62 Windsor DeLuxe	68,014.001; 70,141.001
	C-63-1 New Yorker	68,510.001; 70,591.001
	C-63-2 New Yorker DeLuxe	69,005.001; 7,248.001
	C-66 Crown Imperial	7,817.001
1955	C-67 Windsor DeLuxe	W55-1001; W55L-1001
	C-68 New Yorker DeLuxe	N55-1001; N55L-1001
	C-300 "300"	N56-1001
	C-69 Imperial	C55-1001
	C-70 Crown Imperial	W56-1001; W56L-1001
1956	C-71 Windsor	N56-1001; N56L-1001
	C-72 New Yorker	N56-1001; N56L-1001
	C-72 "300" "300"	N56-1001
	C-73 Imperial	C56-1001
	C-74 Crown Imperial	C56-1001
1957	C-75-1 Windsor	W57-1001; W57L-1001
	C-75-2 Windsor	W57-1001; W57L-1001
	C-76 New Yorker	N57-1001; N57L-1001
	1M-1, -2, & -4 Imperial	C57-1001
1958	LC1-1 Windsor	LC1-1001; LC3-L-1001
	LC2-M Saratoga	LC2-1001; LC3-L-1001
	LC3-H New Yorker	LC3-1001; LC3-L-1001
	LC3-S "300 D"	LC4-1001
	LY1-L Imperial	LY1-1001
	LY1-M Crown Imperial	LY1-1001
	LY1-H Imperial Le Baron	LY1-1001

DE SOTO

1950	S-14 DeLuxe, Custom	6,233.501; 50,062.001; 60,005.001; 62,011.501
1951	S-15 DeLuxe, Custom	6,299.001; 50,155.001; 60,011.001; 62,024.001
1952	S-16 DeLuxe, Custom	6,283.001; 50,230.101; 60,013.001; 62,032.601
	S-17 Firestone	55,000.001; 84,001.001
1953	S-18 Powermaster	50,286.001; 82,039.001
	S-16 Firestone	55,000.001; 84,000.001
1954	S-20 Powermaster	50,306.001; 82,043.001
	S-19 Firestone	55,130.001; 84,017.001
1955	S-22 Firestone	55,185.001; 84,022.001
	S-21 Firestone	50,330.001; 82,045.001
1956	S-23 Firestone	55,258.001; 84,028.001
	S-24 Firestone	50,396.001; 82,046.001
1957	S-27 Firestone	50,001.001; 80,014.001
	S-26 Firestone	55,332.001
	S-28 Firestone	50,396.001
1958	LS1 Firestone	LS1-1.001; LS1L-1.001
	LS2 Firestone	LS2-1.001; LS2L-1.001
	LS3 Firestone	LS3-1.001; LS3L-1.001

DODGE

1950	D-33 Wayfarer	37,060.001; 48,004.001; 48,502.001
	D-34 Meadowbrook, Coronet	31,420.001; 45,064.001; 45,500.001

HENRY J

1951	513	K513-001.001.
	514	K514-001.001.
1952	523	K523-1.200.000.
	524	K524-1.200.000.
1953	533	K533-001.001.
	534	K534-001.001.
1954	543	K543-001.001.
	544	K544-001.001.

HUDSON

1950	Pacemaker	500-101.
	Pacemaker Deluxe	500-101.
	Super 6	501-101.
	Commodore 6	502-101.
	Super 8	503-101.
	Commodore 8	504-101.
1951	Pacemaker Custom	4A-1001.
	Super Custom	5A-1001.
	Commodore Custom 6	6A-1001.
	Hornet	7A-1001.
	Commodore Custom 8	8A-1001.
1952	Pacemaker	6B-132916.
	Commodore 6	6B-132916.
	Hornet	7B-132916.
	Commodore 8	8B-132916.
1953	Jet	1C-202917.
	Super Jet	2C-202917.
	Wasp	4C-202917.
	Super Wasp	5C-202917.
	Hornet	7C-202917.
1954	Jet	1D-1289000.
	Super Jet	2D-1289000.
	Wasp	3D-1289000.
	Super Wasp	4D-1289000.
	Hornet	5D-1289000.
	Super Hornet	6D-1289000.
	Hornet Special	7D-1289000.
1955	Super Wasp 35540-1	W-1001; WC-1001.
	Custom Wasp 35540-2	X-1001; XC-1001.
	Super Hornet 8-35580-1	Y-1001; YC-1001.
	Custom Hornet 8-35580-2	Y-1001; YC-1001.
1956	Super Wasp 35640	W-8101.
	Hornet 8-35640	X-7801.
	Hornet Special 8-35650	Z-1001.
	Hornet 8-35680	Y-7201.
1957	Hornet Super & Custom	Y-10501.

KAISER

1950	K501, K502	K501-001.001; K502-001.001.
1951	K511, K512	K511-001.001; K512-001.001.
1952	K521, K522	K521-1.001.001; K522-1.001.001.
1953	K530, K531, K532, K538	K530-001.001; K531-001.001; K532-001.001; K538-001.001.
1954	161, K542, K545	161-001.001; K542-001.001; K545-001.001.

LINCOLN

1950	OL	90LP-5.001L.
	OH	90LP-5.001H.
1951	IL	91LP-5.001L.
	IH	91LP-5.001H.

Left front door hinge post.

Left front door hinge post.

Left front door hinge post.

Left front door hinge post.

Right front door hinge post and on top of engine block.

Right front door hinge post and on top of engine block.

Right front door hinge post and on top of engine block.

Right front door hinge post and on top of engine block.

Right front door hinge post and on top of engine block.

Under hood on firewall.

Under hood on firewall.

Under hood on firewall.

Left front door post.

Left front door post.

Left front door post.

Left front door post.

Right front body hinge pillar.

Right front body hinge pillar.

STARTING SERIAL NUMBERS, U. S. PASSENGER CARS, 1950-1958

YEAR	MODEL	STARTING SERIAL NUMBER	LOCATION
LINCOLN—continued			
1952	All	52LP-5,001 H.	Right front door hinge post.
1953	All	53LA-5,001 H.	Right front door hinge post.
1954	All	54LA-5,001 H.	Right front door hinge post.
1955	All	55WA-5,001 H.	Left front door hinge post.
1956	All	56WA-5,001 L.	Left front door hinge post.
1957	All	57WA-5,001 L.	Left front door hinge post.
1958	All	HBVC-400,001.	Left front door hinge post.
MERCURY			
1950-51	All	First two digits indicate the Year. Next two letters indicate the assembly plant. Next five digit number indicates the consecutive unit number beginning each year with 10,001. Next letter indicates vehicle being a Mercury.	
1952-53	All	First two digits indicate the Year. Next two letters indicate the assembly plant. Next five digit number indicates the consecutive unit number beginning each year with 10,001. Next letter indicates vehicle being a Mercury.	
1954-57	All	First two digits indicate the Year. Next two letters indicate the assembly plant. Next five digit number indicates the consecutive unit number beginning each year with 10,001. Next letter indicates vehicle being a Mercury.	
1958	All	First letter indicates the assembly plant. Next six digit number indicates the consecutive unit number beginning with 500,001.	
NASH			
1950	Ser. 40 Statesman Ser. 60 Ambassador	K-340,001; KC-9,501. R-555,001; RC-3,501.	Right side of dash under hood.
1951	Ser. 40 Statesman Ser. 60 Ambassador	K-438,001; KC-23,501. R-600,501; RC-3,701.	Right side of dash under hood.
1952	Ser. 40 Statesman Ser. 60 Ambassador	K-518,001; KC-37,001. R-655,001; RC-14,501.	Right side of dash under hood.
1953	Ser. 40 Statesman Ser. 60 Ambassador	K-663,501; KC-43,001. R-692,101; RC-16,001.	Right side of dash under hood.
1954	Ser. 40 Statesman Ser. 60 Ambassador	K-815,501; KC-47,201. R-722,501; RC-32,001.	Right side of dash under hood.
1955	Ser. 40 Statesman Ser. 60 Ambassador	K-835,001; KC-48,101. R-742,501; RC-33,001.	Right side of dash under hood.
1956	Ser. 40 Statesman Ser. 60 Ambassador Special Ser. 80 Ambassador	K-840,201. R-747,501; RC-34,001. V-11,501; VC-1,001.	Right side of dash under hood.
1957	Ser. 80 Ambassador	V-16,501.	Right side of dash under hood.
1950	All	First two digits indicate the Year. Next digit indicates the series; 6 for Ser. 76; 8 for Ser. 88; 9 for Ser. 98. Next letter indicates the assembly plant. Next four or five digit numbers indicate the consecutive unit number, beginning with 1,001.	Left front door hinge post.
OLDSMOBILE			
1950	All		
PLYMOUTH—continued			
1951	P-22 Concord P-23-1 Cranbrook	18,126,001; 24,042,001; 28,011,001; 28,513,001. 15,460,001; 22,132,001; 26,040,001; 28,312,001. 12,635,001; 20,435,001; 25,112,001; 25,331,001.	Left front door hinge post.
1952	P-22 Concord P-23-1 Cranbrook	18,192,001; 24,056,701; 28,015,701; 28,518,101. 15,571,001; 22,159,601; 26,045,701; 28,318,201. 12,906,701; 20,465,001; 25,125,301; 25,546,101.	Left front door hinge post.
1953	P-24-1 Cambridge P-23-2 Cranbrook	13,070,001; 20,520,001; 25,136,001; 25,560,001.	Left front door hinge post.
1954	P-25-1 Plaza; P-25-2 Savoy; P-25-3 Belvedere	13,506,001; 20,658,001; 25,163,001; 25,590,001.	Left front door hinge post.
1955	P-26-1 Plaza; P-26-2 Savoy; P-27-1 Plaza; P-27-2 Savoy; P-27-3 Belvedere	13,835,001; 20,745,001; 25,180,001. 15,663,001; 22,182,001; 26,500,000; 26,524,001.	Left front door hinge post.
1956	P-28 Suburban; P-28-1 Plaza; P-28-2 Savoy; P-28-3 Belvedere	14,720,001; 20,820,001; 25,202,001.	Left front door hinge post.
1957	P-29-2 Savoy; P-29-3 Belvedere & Fury	15,873,001; 22,247,001; 26,552,001.	Left front door hinge post.
1958	P-30-1 Plaza; P-30-2 Savoy; P-31-1 Plaza; P-31-2 Savoy; P-31-3 Belvedere; P-31 Fury LP1-H; LP1-L; LP1-M LP2-H; LP2-L; LP2-M	14,280,001; 20,860,001; 25,215,001; 28,100,001. 16,083,001; 22,330,001; 26,595,001; 28,525,001. LP1-1,001; LP1E-1,001; LP1L-1,001; LP1N-1,001. LP2-1,001; LP2E-1,001; LP2L-1,001; LP2N-1,001.	Left front door hinge post.
PONTIAC			
1950-54	All	First letter indicates the assembly plant. Next digit indicates the engine used. Next letter indicates the Year; Y for 1950, U for 1951, W for 1952, X for 1953, Z for 1954. Next letter indicates the transmission used. Next four or five digit number indicates the consecutive unit number beginning each year with 1,001.	Left front door pillar post.
1955-58	All	First letter indicates the assembly plant. Next digit indicates the engine used. Next letter indicates the Year. Next four or five digit number indicates the consecutive unit number beginning each year with 1,001.	Left front door pillar post.
RAMBLER			
1950	All	D-1,001.	Under hood on dash panel.
1951	All	D-6,501; DC-1,001.	Under hood on dash panel.
1952	All	D-78,501; DC-4,101.	Under hood on dash panel.
1953	All	D-127,501; DC-9,001.	Under hood on dash panel.
1954	All	D-171,501; DC-12,301.	Under hood on dash panel.
1955	All	D-205,001; DC-15,001.	Under hood on dash panel.
1956	All	D-276,101.	Under hood on dash panel.
1957	Ser. 10 Ser. 20 Ser. 30 Rebel American Ser. 40 Rebel Ser. 50 Rebel Ser. 60 Ambassador	D-341,001. A-1,001. F-1,001. M-1,001. N-1,001. A-16,001. V-27,001.	Under hood on dash panel.

STUDEBAKER

1951	All	First two digits indicate the Year. Next digit indicates the series: 7 for Ser. 88; 8 for Ser. Super 88; 9 for Ser. 98. Next letter indicates the assembly plant. Next four or five digit number indicates the consecutive unit number beginning with 1,001.	Left front door hinge post.
1952	All	First two digits indicate the Year. Next digit indicates the series: 8 for Ser. 88; 9 for Ser. 98. Next letter indicates the assembly plant. Next four or five digit number indicates the consecutive unit number beginning with 1,001.	Left front door hinge post.
1953-57	All	First two digits indicate the Year. Next digit indicates the series: 7 for Ser. 88; 8 for Ser. Super 88; 9 for Ser. 98. Next letter indicates the assembly plant. Next four or five digit number indicates the consecutive unit number beginning with 1,001.	Left front door hinge post.
1958	All	First two digits indicate the Year. Next digit indicates the series: 8 for Ser. 88; 9 for Ser. Super 88; 9 for Ser. 98. Next letter indicates the assembly plant. Next five digit number indicates the consecutive unit number beginning with 01,001.	Left front door hinge post.

ACKARD

1950 Ser. 2301-5

2362-5-1,001; 2365-5-1,001; 2392-5-1,001.
2393-5-1,001; 2395-5-1,001.

Plate on engine side of (day).

WILLYS

[illegible]

PLYMOUTH

1950	P-19 DeLuxe.....	18,041.001;	24,012.001;	28,004.001;	28,503.501.
	P-20-1 DeLuxe.....	15,359.501;	22,097.601;	26,030.501;	26,594.001.
	P-20-2 Special DeLuxe.....	12,384.501;	20,367.001;	25,097.01;	25,611.001.

Air Suspension *Continued from page 47*

eliminates the valve plate normally used in reed valve compressors.

Oldsmobile: The air compressor is a two cylinder V-block design having a piston displacement of five cu. in. It is driven from the engine with a pair of matched belts, and the compressor crankshaft and is extended

to the rear to drive the power steering pump rotor. An oil pump is incorporated into the compressor design and its oil is supplied from the power steering pump reservoir.

Rambler: A Bendix-Westinghouse compressor having a piston displacement of 2.7 cu. in. supplies one cubic foot of air per

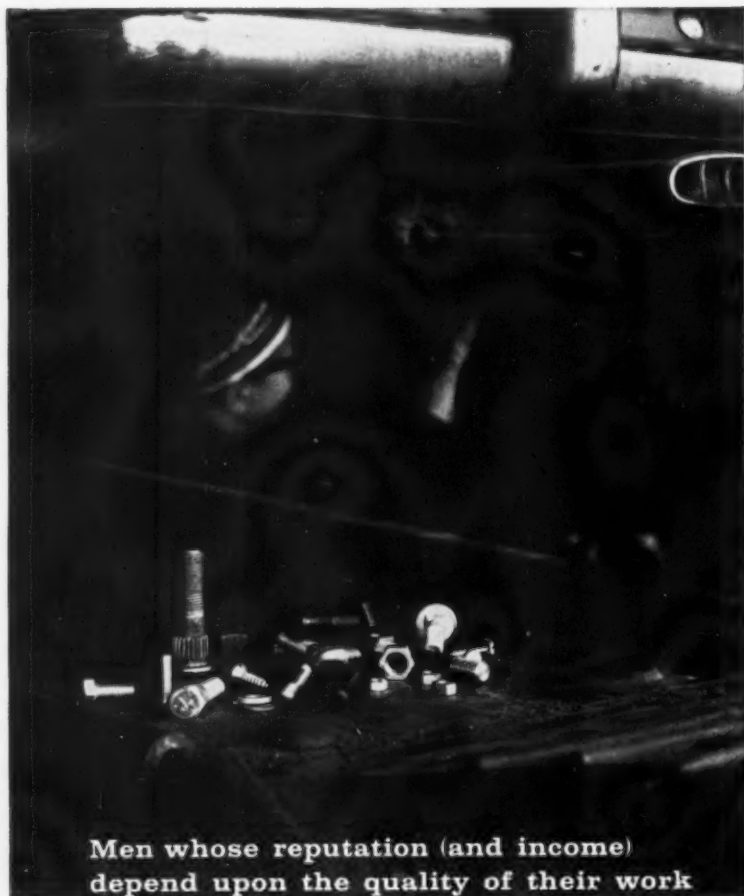
minute at 150 psi., at 50 mph. This compressor is driven from the engine by a belt.

Compressor Disassembly Procedure:

Invert compressor and remove bolts and lock washers which retain the sump cover plate to block. Remove plate and square cut rubber sealing ring. Allow all remaining oil to drain out. Turn compressor over and remove six head bolts from each head. Remove heads and gaskets. It may be necessary to tap the heads lightly with a raw hide mallet to break them loose. Never pry them. Scrape off any gasket material on heads or block. Invert compressor and work through the sump opening to remove piston and rod assemblies. Remove the rod bolts, lock-washers and caps. Push pistons and rods out of top of block. Remove snap rings at each end of piston pin with special pliers. Remove the three rings from the pistons. Remove the two bolts retaining bearing plate and pump assembly to block. Carefully slide bearing plate and pump assembly from crankshaft to prevent damage to bearing. Remove the square cut rubber sealing ring and two small "O" rings from the bearing plate and pump assembly. Remove the lubrication by-pass valve plug, spring and plunger. Remove the test plug which is below the by-pass valve opening. Remove crankshaft from the block through the rear opening. Place a steel washer of approximately 1½ in. inside diameter around the outer face of seal opening to protect the bore. Insert tip of screw driver well into the rubber seal to insure contact with metal flange and pry upward. Use caution to prevent bearing damage while removing seal.

Assembly Procedure:

Wash all parts in a solvent and blow dry with compressed air. Inspect all parts, openings



Men whose reputation (and income) depend upon the quality of their work can't afford to take chances with inferior replacement parts. They insist on bolts, nuts, cap screws from the complete line of Lamson & Sessions original equipment fasteners...world's largest, most dependable manufacturer of automotive fasteners.

The Lamson & Sessions Co.

5000 TIEDEMAN ROAD, CLEVELAND 9, OHIO • PLANTS AT CLEVELAND & KENT, OHIO • CHICAGO • BIRMINGHAM

At right: Members of Pennsylvania Automotive Association's Executive Committee. Seated, from left to right, B. Wayne Beglin, Robert N. Romesburg, David G. Reese (newly elected president of the Association), Claude S. Klugh. Standing: W. J. Daub, F. E. Bowles, J. A. Moore, John B. White, A. W. Golden. (C. A. Dailey not present in photo).



and passages to make sure they are clean and in good condition. Inspect front seal and bore for any roughness or scores. Any such damage should be dressed down before installing a new seal. Install a new seal in bore, using a special seal installer. Install seal flush with top of bore. Lubricate the front bearing and oil seal with automatic transmission oil. Install crankshaft and push through the oil seal and bearing with a slow, steady pressure. Be sure the oil passage in the shaft is open. Replace the two "O" rings at oil passage holes. Place a new square cut sealing ring against shoulder in compressor housing. Rotate the crankshaft until the oil pump drive pin points toward the corresponding hole in the bearing plate. Lubricate crankshaft liberally with automatic transmission oil. Ease bearing plate and pump assembly into position over shaft. Rotate bearing plate back and forth slightly until drive pin can be felt in rotor slot. Then press assembly forward. Install the two retaining bolts and tighten to 40-50 in. lbs. torque. Continue the reassembly in the reverse order of disassembly.

Special Notes on Assembly:

Install rings on pistons with the raised dot facing upward. Use a hard hone to break the cylinder bore glaze. Connecting rod caps are correctly installed when the grooves on the rod and cap match each other. Tighten rod bolts to 25-30 in. lbs. torque. Torque cylinder head bolts to 80-90 in. pounds.

INLAND Announces a **NEW**

1-PIECE RADIATOR SHOP

3 ESSENTIAL UNITS COMBINED INTO 1

Now, radiator servicing can give you worth-while profits. For Inland has developed the first complete 1-Piece Radiator Shop!

COSTS LESS TO BUY It gives you a complete radiator department—everything you need to do the entire job—TEST, CLEAN and REPAIR radiators.

COSTS LESS TO OPERATE You don't need a full time operator. One of your present employees (our free factory school teaches him everything) in only a part of his time will produce a nice additional profit with no increase in overhead.

TAKES LITTLE ROOM Complete unit requires only 11' 7" of wall space. Yet,

it is large enough to handle all car radiators and many truck and tractor radiators.

COMPLETE SHOP Does everything! Servicing radiators with the Inland Radiator Shop is easy—the unit combines the Flo-Test Machine, Hot Cleaning Vat and Test & Repair Bench—all in compact space.

RADIATOR SERVICING IS PROFITABLE Market is growing! Motor Service survey shows that in 1957 there was an INCREASE OF 15.8% IN RADIATOR REPAIR JOBS! This was one of the few large increases in the 1957 service job analysis!

WRITE for Free 48-Page Book

showing equipment, prices, training course, "Pay-For-Itself" purchase plan and experiences of other operators.

INLAND MFG. CO.

1108 Jackson Street
Dept. MA-7 Omaha 2, Nebr.
World's Largest Manufacturer of
Radiator Servicing Equipment

INLAND MFG. CO., Dept. MA-7, 1108 Jackson St., Omaha 2, Nebr.
Please send free 48-pg. book describing new 1-Piece Radiator Shop, training school, prices, etc.

NAME _____ (PLEASE PRINT)

ADDRESS _____

CITY _____ ZONE _____ STATE _____

BY _____ TITLE _____

If dealer, make of car sold _____

Are you now operating a radiator Dept.? ☐ Yes ☐ No

Wearin' of the Grin



"Can you have it done by \$16.95?"

CURRENT PASSENGER CAR PRICE, WEIGHT AND BODY TABLE

Following are prices at factory for cars with standard equipment as of June 13, 1958
State or local taxes, transportation and finance charges and optional equipment are extra.

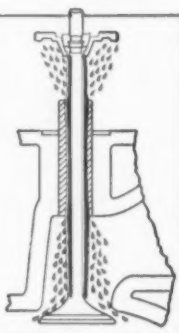
BODY MAKE AND MODEL	AMERICAN MOTORS CORP.				CHRYSLER CORP. cont'd				FORD MOTOR CO. cont'd				GENERAL MOTORS CORP. cont'd			
	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges Suggested Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges Suggested Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges Suggested Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges Suggested Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL
AMERICAN MOTORS CORP.																
RAMBLER				DODGE, Cont'd				FORD, Cont'd				CADILLAC, Cont'd				
American	1831	2483		Regal, V8				Sta. Wags. V8				Imperial	7950	725	6875	5425
Del. Sedan, 2d	1710	2475		Lancer, 2d	2966	234	3200	Ranch Wag., 2d	2293	186	2479	3620				
Deluxe 6				Sta. Wagon				Ranch Wag., 2d	2343	190	2533	3677				
Sedan, 4d	1875	172	2047	Suburban 2d	2715	215	2930	Del Rio Wagon	2382	193	2565	3625				
Super 6				Sierra, 2d	2775	220	2995	Ctry. Sed., 6p.	2442	197	2639	3682				
Sedan, 4d	2028	184	2212	Sierra, 3a	2907	230	3137	Ctry. Sed., 6p.	2542	204	2746	3750				
H. T. Sedan, 4d	2098	189	2287	Cus. Sierra, 2a	2940	232	3172	Country Squire	2663	213	2876	3787				
Sta. Wagon, 4d	2302	204	2506	Cus. Sierra, 3a	3072	242	3314	Thunderbird								
Custom 6								Tudor	3330			3708				
Sedan, 4d	2135	192	2327	IMPERIAL				Convertible								
Sta. Wagon, 4d	2409	212	2621	Imperial	4417	347	4763									
Rebel, Sup. V8				Southamp., 2d	4516	354	4870	LINCOLN								
Sedan, 4d	2149	193	2342	Southamp., 4d	4516	354	4870	Capri								
Sta. Wagon, 4d	2423	213	2636	Sedan, 4d	4516	354	4870	Hardtop, 2d	4415			4735				
Cus. V8				Crown	4928	365	5313	Sedan, 4d	4553			4735				
H. T. Sedan, 4d	2256	201	2457	Southamp., 2d	5155	402	5557	4d	4553							
Sta. Wagon, 4d	2326	206	2532	Sedan, 4d	5155	402	5557	Premiere	4894			4820				
Amb. Sup. V8	2530	221	2751	Conv. Coupe	5273	411	5684	Sedan, 4d	5124			4880				
Sedan, 4d	2369	218	2587	Del Baron	5468	426	5894	Hardtop, 2d	5124			4880				
Sta. Wagon, 4d	2643	238	2981	Sedan, 4d	5468	426	5894	Continental	5367			4865				
Amb. Cus. V8				Southamp., 4d	5468	426	5894	Sedan, 4d	5597			4865				
Sedan, 4d	2504	228	2732	Limousine	14019	931	15000	Hardtop, 4d	5597			4365				
H. T. Sedan, 4d	2568	234	2822					Convertible	5792			5040				
Sta. Wagon, 4d	2776	248	3026	PLYMOUTH												
H. T. St. Wag., 4d	2852	254	3115	Plaza V8	1943	158	2101	MERCURY								
				Bus. Coupe	2026	164	2190	Monterey								
				Club Sedan	2074	168	2242	Sedan, 2d	2422			4090				
				Sedan, 4d	2074	168										

* Prices of 6 cyl. models are \$100 less than 8 cyl. models.

NOW! STOP OIL THROUGH

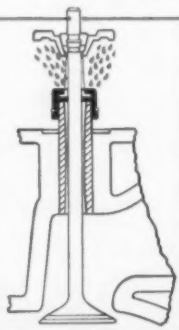
THE PROBLEM

The high intake manifold vacuum that occurs during deceleration and the vacuum normally created at the lower end of valve guides by the rapid surge of gas creates a low static pressure...an atomizing effect...during intake and exhaust strokes. This drains oil through the valve guides and into the manifolds.



THE SOLUTION

The Perfect Circle Valve Seal is shown here installed on a typical overhead valve. The contracting Teflon oil control ring functions very much like a piston ring. It keeps the atmospheric pressure and oil in the rocker arm chamber from equalizing with the vacuum in the manifold. The contracting force of the ring on the valve stem prevents passage of air or oil between the stem and guide, but distributes and leaves a very thin film of lubricant on the valve stem.



EASY TO INSTALL

...the only special tool that may be required is a valve guide cutting tool.



PERFECT CIRCLE

Perfect Circle Corporation, Hagerstown, Indiana;

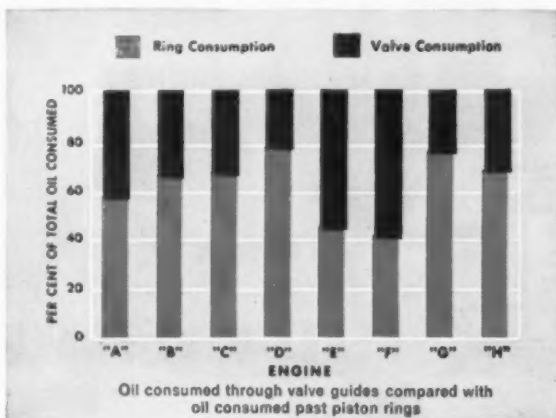
Chilton's MOTOR AGE, JULY, 1958

LOSS VALVE GUIDES

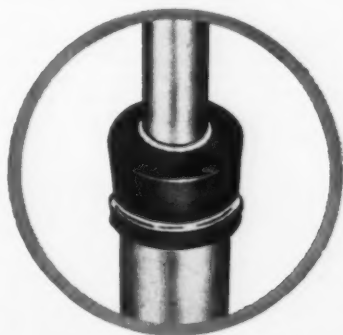
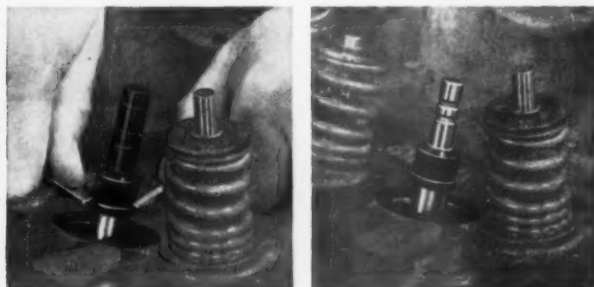


lost through the valve guides than past the pistons. See chart.

Today there is a simple, positive solution to the problem—Perfect Circle Valve Seals. Developed by Perfect Circle engineers after years of research and testing, the Perfect Circle Valve Seal was further refined through collaboration with the engineers of interested engine manufacturers. Perfect Circle Valve Seals are easy to install and are low in cost. They are now available for popular makes of cars.



Perfect Circle Valve Seals are now available for popular makes of cars. See your jobber for the latest list of cars for which PC Valve Seals are available.



PC Valve Seals adjust to valve stems of a wide range of diameters and therefore accommodate a wide range of stem-to-guide clearances. Because of this, PC Valve Seals can handle severe cases of oil loss through valve guides. They often save valve guide replacement or reaming and replacement with over-size-stem valves. PC Valve Seals come packaged in sets in a handy reusable plastic box ...complete with installation instructions.

VALVE SEAL

PAT. PEND.

The Perfect Circle Co., Ltd., Don Mills, Ontario, Canada

Chilton's MOTOR AGE, JULY, 1958

*Produced by the makers of
Perfect Circle piston rings
and other
Power Service products*

when it becomes known that your place has "specialists who know their business." The photographs illustrating this article show the important steps necessary to produce unexcelled body refinishing work. Be sure to follow each step carefully. You will never be troubled with customer complaints about poor-quality finishes.

Reconditioning Damaged Area

The first step in preparing body metal for refinishing is to recondition the damaged area. Dents are brought out by careful and proper use of body hammers and dollies. Some dents or small holes may require the use of metal filler. Large tears in the metal or rips along fender

edges are best required by welding. Tar and wax should be removed from the area to be refinished, using a good wax and grease remover.

The first sanding operation is for the removal of rust and paint. A coarse-grit paper is used, such as #16B. Sand down to the bare metal and over an area beyond the damaged spot.

The smoothness of body contours is restored by the next sanding operation in which a coarse paper of #24 type is used. This cuts down welds and smooths repaired areas. Surface bumps should have been straightened as much as possible to avoid excessive sanding which might penetrate body metal.

The purpose of the next sanding operation is to condition the metal. This is done by removing the deep scratches with the use of a #50 sanding disc. Notice in the sanding sequence how the disc scratches become finer and finer until a very smooth metal surface is obtained. It is important to use the various grades of sanding discs to insure a perfect finish.

Final sanding is done with a #80D production feathering disc. Body metal takes on a smooth surface and paint edges are "feathered" or smoothed.

After the sanding operation is completed an undercoat or primer coat is sprayed on. This gives the right foundation and proper bond for a smooth, long-lasting outside finish. Primer coat has to be smoothed and this is best done by using a wet-type sandpaper with a #320A grit. A wet sponge is held above the sprayed area and the water allowed to drip down the surface while the sanding is being done. The water serves to drain off the minute particles which would otherwise clog the fine sandpaper.

Applying Finish Color

Next comes the spraying of the finish color. A properly

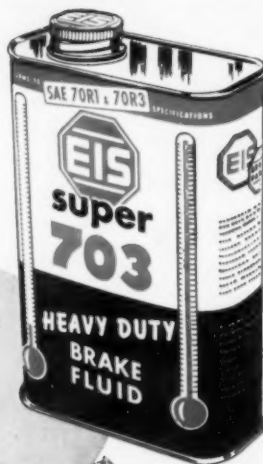
NEW! *safer braking for today's heavier and faster vehicles!*



super 703
HEAVY-DUTY BRAKE FLUID

This all-new EIS Super 703 Heavy-Duty Brake Fluid EXCEEDS SAE 70R1 SPECIFICATIONS AND CONFORMS TO THE NEW SAE 70R3 REQUIREMENTS!

Eis Super 703 Brake Fluid can operate in excess of 400° F without boiling, yet flows freely at minus 60° F. It works perfectly with all rubber and metal parts in the brake system and is miscible with brake fluids of equal quality. It will maintain its chemical and physical properties in today's high operating brake temperatures.



companion product to EIS Super-Quality Brake Parts!

And remember...
MOST STATES REQUIRE THE USE OF HEAVY-DUTY SAE BRAKE FLUIDS!

Check fluid when you check brakes and refill with new EIS Super 703! Available in 12 oz., pint, quart and gallon cans as well as drums. Make sure you have EIS Super 703 on hand! Order from your EIS Distributor—it costs no more!

Now ready! New Hydraulic Parts Catalog! Write for your copy today!

EIS AUTOMOTIVE CORP. MIDDLETOWN, CONN.

matched color will blend in perfectly and duplicate the original appearance. Apply a sufficient thickness to allow proper buffing without bleeding of the primer coat. Notice how the hood has been protected against over-spray by the use of masking tape and paper.

Proper lustre of the finish coat is obtained by buffing. Apply a liberal amount of finishing compound to the area and use a power buffer to bring out a deep lustre in the new finish. Using properly matched colors, factory-approved procedures, and correct grit sequence of coated abrasives, the car regains its original gleaming "showroom" appearance.



L. S. Grossman points to new nameplate on '58 Chevrolet while C. T. Skanse holds first plate made in 1933. Skanse began his Douglas Company that year by selling dealer Grossman 500 of the emblem plates. Company now turns out over 25 million plates for both U.S. and foreign cars.

Auto Radar Unit Undergoing Tests

Automobile radar that warns the driver of traffic hazards is undergoing road tests.

"No real difficulty" is foreseen to manufacture it at a practical price. This is the view of engineers of the Research Laboratories Division of Bendix Aviation Corp., manufacturer.

Bendix's device has a radar antenna about the size of a hollowed steak platter mounted in the car grille. The antenna produces "beep beep" sounds alerting the driver to traffic

ahead. Specifically, that he is overtaking the car in front too rapidly. Or that he's approaching an object on a possible collision path. Or of threatening cross traffic.

Engineers report the warning cry is light if moderate speed is used to overtake another car. Also if the car is in the distance. As the distance shrinks, however, the signal grows louder.

Director of Bendix's research laboratory, Dr. Winston E. Kock says design improvements limit the signal to objects within safe stopping distance. Also ignore situations when the car ahead is within danger distance but drawing away. Other adjustments allow open-country or congested traffic driving. And reduce background noises that confuse the signal.

He pays your bills—so treat him right!



ALWAYS USE GENUINE BENDIX STARTER DRIVES



A service business won't last long unless a good percentage of first-time customers becomes repeat customers. What makes them repeat customers? That's easy: satisfaction with the job you do for them. That's why it always pays to use only

genuine parts in your repair work. Never is this more true than when servicing Bendix* Starter Drives. Always use genuine factory-new Bendix Drives and parts and you'll always send your customer away happy. He'll be back, too, because his car's performance will mark you as the man to see for all his service needs. First in its field for fifty years, the Bendix Drive has proved its right to be called the best many times over. Make sure your distributor always gives you *genuine, factory-new* Bendix Starter Drives.

*REG. U.S. PAT. OFF.

Bendix • Elmira, N.Y.

ECLIPSE MACHINE DIVISION



1958 New Passenger Car Registrations by Makes by States*

STATE AND MONTH	Buick	Cadillac	Chevrolet	Chrysler	De Soto	Dodge	Edsel	Ford	Imperial	Lincoln	Mercury	Oldsmobile	Packard	Plymouth	Pontiac	Rambler	Studebaker	Misc. Dom.	Foreign	Total	
Alabama	Apr. 389	120	1486	56	35	143	54	1097	15	26	144	339	1	385	259	100	1	2	371	5,072	
Apr. 1489	414	5600	223	130	488	203	4495	56	88	527	1384	4	1427	1012	389	101	3	1054	19,109		
4 Mos. 473	54	612	18	11	46	20	25	143	23	64	103	1	143	86	82	5	290	1,062	8,382		
Arkansas	Apr. 120	66	692	86	55	220	85	1501	45	81	249	822	5	573	401	293	48	1074	8,382		
4 Mos. 839	268	3844	117	17	53	12	541	2	8	87	162	2	140	127	65	31	124	2,206	13,447		
California	Apr. 1319	1394	9169	426	364	1082	264	7067	167	282	926	1495	22	1070	708	276	133	1	425	6,117	
4 Mos. 6340	5215	37853	1965	1478	4916	1315	29945	802	1386	3914	7509	97	12524	11459	1148	195	8	2167	145,349		
Colorado	Apr. 191	111	1274	38	34	166	26	879	16	33	158	259	1	365	487	332	33	3	398	4,390	
4 Mos. 895	370	4800	223	180	625	222	3489	23	46	172	410	5	1396	842	703	133	15	1212	16,962		
Connecticut	Apr. 323	221	1581	103	71	200	62	1189	23	46	172	410	5	1396	842	703	133	15	1212	16,962	
4 Mos. 1042	960	4999	389	268	668	227	4003	64	181	542	1315	23	2135	1139	840	195	4	112	6,758		
Delaware	Apr. 68	36	340	27	16	37	9	268	7	60	102	1	197	81	41	4	2438	21,160	1,596		
4 Mos. 296	149	1797	83	76	142	54	1117	17	33	170	382	1	611	304	112	36	340	1,596	1,596		
Dist. of Columbia	Apr. 76	73	528	33	97	255	12	324	7	10	62	126	1	102	102	41	11	3	203	1,921	
4 Mos. 250	280	1964	141	97	255	12	324	7	10	62	126	1	102	102	41	11	3	203	1,921	1,921	
Florida	Apr. 724	549	2805	123	117	241	92	2585	28	570	1416	3274	24	3941	2044	1228	300	11	6528	53,000	
4 Mos. 3092	2209	14705	515	462	1048	475	10689	288	570	1416	3274	24	3941	2044	1228	300	11	6528	53,000	53,000	
Georgia	Apr. 1728	112	1225	42	46	105	30	1322	6	11	49	1969	14	1910	1572	393	153	12	1751	26,461	
4 Mos. 67	44	345	273	141	587	209	8956	48	141	668	1912	3	319	225	61	55	12	105	105	2,646	
Idaho	Apr. 363	168	1307	88	64	185	76	981	24	54	228	404	5	487	403	339	99	437	5,712	5,712	
4 Mos. 2123	1058	8975	431	305	1077	183	5463	81	221	905	2611	24	2293	1524	1087	275	18	869	29,133	29,133	
Illinois	Apr. 8097	3776	32827	1678	1254	2519	877	21735	426	967	3320	9497	101	8737	6363	3892	1102	179	2967	110,394	
4 Mos. 1321	497	4124	189	190	471	206	3468	49	103	458	1496	25	1224	856	540	332	5	548	16,123	16,123	
Indiana	Apr. 411	116	11781	590	563	1250	595	9904	178	300	1371	3900	77	3553	2478	1267	965	19	1327	45,068	
4 Mos. 1692	484	7681	318	225	695	279	6497	56	111	807	224	453	1	541	361	276	72	5	8623	8,603	
Kansas	Apr. 562	189	2615	118	85	226	86	2057	16	45	282	572	10	1847	1554	793	250	22	581	26,412	
4 Mos. 1553	442	6540	304	269	648	278	5896	63	122	708	1501	14	632	503	291	86	4	268	86,03	86,03	
Kentucky	Apr. 247	96	1203	48	35	85	913	9	23	136	297	1	352	1379	692	205	9	696	22,650	22,650	
4 Mos. 1230	360	5132	186	141	331	3707	41	81	601	1348	18	1295	909	330	98	18	134	5,90	16,550	16,550	
Louisiana	Apr. 306	133	1855	58	41	138	31	1461	12	33	177	477	4	368	332	101	20	12	450	5,90	
4 Mos. 1540	533	8246	235	166	587	224	6787	66	145	743	2001	6	1733	1541	294	133	18	379	5,92	5,92	
Maine	Apr. 494	171	2140	77	87	282	50	1777	15	32	282	401	6	280	130	116	26	1	116	26,073	
4 Mos. 344	168	2241	126	90	243	42	1539	34	23	188	352	1	710	435	321	122	1	709	2,612	2,612	
Maryland	Apr. 1471	559	8328	467	367	960	240	5907	113	110	730	1613	14	3010	1477	504	189	5	1586	27,666	
4 Mos. 788	364	2963	185	174	445	240	5907	113	110	730	1613	14	3010	1477	504	189	5	1586	27,666	27,666	
Massachusetts	Apr. 2361	1106	8549	587	538	1105	266	2570	34	74	313	859	8	1345	909	766	90	23	1095	12,760	
4 Mos. 1346	601	2597	236	233	713	372	4913	80	143	986	1898	14	1891	1157	747	129	54	2964	36,689	36,689	
Michigan	Apr. 5058	2301	21133	910	920	2230	1311	18627	235	61	328	745	8	6145	4307	2320	442	20	951	22,462	
4 Mos. 895	239	2652	154	143	417	40	2067	39	53	328	745	8	6145	4307	2320	442	20	951	22,462	22,462	
Minnesota	Apr. 2488	739	9709	464	398	1099	374	7438	115	197	1116	2849	23	2765	2092	1394	390	142	868	77,218	
4 Mos. 214	62	848	27	18	57	18	676	6	6	60	184	1	166	157	44	15	95	2,654	2,654		
Mississippi	Apr. 883	230	3540	86	79	220	107	2951	24	42	229	823	3	168	157	44	15	95	2,654	2,654	
4 Mos. 731	261	3902	112	139	379	107	2951	24	42	229	823	3	168	157	44	15	95	2,654	2,654	2,654	
Missouri	Apr. 2335	873	11613	405	429	1036	326	7899	31	57	290	820	10	1058	616	320	123	3	549	11,194	
4 Mos. 444	48	510	26	17	73	22	416	10	163	957	2677	28	3215	2012	784	383	4	1280	37,637	37,637	
Montana	Apr. 222	90	1227	42	18	108	18	929	10	42	233	425	3	420	332	302	103	7	105	1,918	
4 Mos. 931	308	4368	186	87	377	127	3651	43	86	471	1019	16	1112	817	396	132	34	444	14,625	14,625	
Nevada	Apr. 42	57	217	17	19	28	30	204	8	17	52	76	1	86	61	16	15	185	1,131	1,131	
4 Mos. 119	139	696	59	53	100	70	204	8	17	52	76	1	86	61	16	15	185	1,131	1,131	1,131	
New Hampshire	Apr. 81	51	523	25	10	59	17	651	16	52	131	196	5	173	118	106	22	1	262	1,997	
4 Mos. 210	114	1234	52	37	151	42	361	9	26	148	83	5	173	118	106	22	1	262	1,997	1,997	
New Jersey	Apr. 526	695	4285	352	242	575	117	2716	92	129	435	1186	18	1869	798	583	143	8	570	4,718	
4 Mos. 3624	2343	15146	1438	1102	2213	626	10472	370	533	1639	4369	68	6515	3250	1852	543	8	4231	16,354	16,354	
New Mexico	Apr. 109	47	15146	1438	1102	2213	626	10472	370	533	1639	4369	68	6515	3250	1852	543	8	4231	16,354	16,354
4 Mos. 461	143	1926	99	16	49	22	322	7	8	111	458	1	149	95	54	12	124	1,603	1,603		
New York	Apr. 2459	1579	10218	781	596	188	88	1291	27	49	228	458	54	4252	2094	1459	407	73	3353	41,667	
4 Mos. 9115	5467	32962	3029	2266	4954	1220	23866	787	1286	3937	12651	127	13463	7479	4017	1357	149	10280	138,432	138,432	
North Carolina	Apr. 344	148	1347	71	42	166	44	1617	54	113	568	1817	21	1711	1397	408	216	2	841	23,485	
4 Mos. 1747	804	6057	301	265	652	207	1398	10	22	113	375	10	167	75	71	22	2	841	23,485	23,485	
North Dakota	Apr. 408	27	459	31	15	62	19	391	23	41	57	132	1	612	307	256	81	146	1,692	1,692	
4 Mos. 1633	658	8154	328	334	960	212	5295	76	148	242	1005	20	2286	1233	742	215	5	1211	24,137	24,137	
Ohio	Apr. 6421	2667	24317	1388	1375	3515	977	20711	320	678	3332	7121	81	8374	5335	2262	779	80	3782	93,485	
4 Mos. 1219	430	5509	144	163	421	120	31	1040	9	35	128	382	3	375	233	144	43	3	261	4,714	
Oklahoma	Apr. 267	99	1458	46	47	107	78	4162	34	111	483	1331	8	379	275	468	156	21	784	17,902	
4 Mos. 879	347	4519	140	162	371	212	3722	71	135	658	893	12	1179	895	799	59	1	797	5,640	5,640	
Oregon	Apr. 5989	2798	8124	459	392	999	228	4549	99	168	874	1887	32	3053	1217	811	256	5	2351	17,681	
4 Mos. 97	77	413	33	26	38	9	452	18	63	291	867	126	9931	4910	2503	968	18	2031	96,181	96,181	
Rhode Island	Apr. 235	63	842	26	23	158	54	1502	43	61	136	486	2	222	63	129	18	1	206	2,004	
4 Mos. 960	259	3379	118	118	256	111	2927	31	56	315	104	1	80	224	333	46	1	635	6		

40,000,000

car owners are being pre-sold on

INTERNATIONAL PARTS MUFFLERS



DS-11



DS-12

MOTOR
TUNE-UP

BRAKE
SERVICE

TOWING
SERVICE

BODY
REPAIR

WHEEL
BALANCING

SHOCK
ABSORBERS

with Powerful Color
Advertising in



NOW AVAILABLE... 2 NEW A-SIGNS

With International Parts Mufflers you have your choice of two attractive eye-catching A-signs. Both are embossed 3-color all-weather 6' metal signs. Sign #DS-11 is devoted entirely to International Parts Mufflers. Sign #DS-12 is a combination display featuring International Parts Mufflers on the upper half and 12 interchangeable services on the lower portion. Either sign will directly tie-in your service station or repair shop with International Parts sales stimulating national advertising program.

Be sure you display the A-sign
they will be looking for.



International Parts Corporation

4101 West 42nd Place

Chicago, Illinois

West Coast Warehouse: Los Angeles 11

International Parts (Canada) Ltd., Scarboro, Ont.

COPYRIGHT 1958—INTERNATIONAL PARTS CORP.



Missouri Governor James T. Blair (third from left) presents St. Louis Cardinals' Stan Musial with appropriate lifetime license plate in honor of his 3,000th major league hit. Hall of Fainers Tris Speaker (left) and Paul Waner (right) give approval.

NEWSCENE

Stretching over the country, the "You Auto Buy Now" campaign was ceremoniously begun at Grants Pass, Oregon, with the burial of "Old Man Gloom." Grave is located near Martin Studebaker - Packard agency.





A five-foot model of Auto-Lite's Resistor Spark Plug with Power Tip is attractively compared with another model in photograph above.

▼ Technical Editor Jack Montgomery (left, below) presents Ed Elisian with the Motor Age Trophy, awarded yearly to driver of the fastest single qualifying lap for the Indianapolis '500' race. Elisian turned an official 146.508 mph in the John Zink Special racing car.



GMC brand now rides the range (as well as the highways) in sunny Arizona. White-hatted Gene Bogard, Tucson GMC truck dealer, measures a branding iron against brand worn by bull of Lockett Angus Farms.



"Mr. Inside" & "Mr. Outside"

Continued from page 39

skill and up-to-date information.

Similarities to Your Shop

In fact, as you read this story, you'll see similarities in techniques you now employ. Or are soon putting into action. As at the Hill Brothers the Volume Shop can be spotted by many or all of these characteristics:

1. The man who runs it is a businessman.
2. While his mechanical skills are excellent, he throws in that additional ingredient called "Salesmanship".
3. "Salesmanship" in the shop takes many forms:
 - a) road-testing a car with a customer who's worried about it.

BY DEMAND...FROM ENGLAND

ARMSTRONG Cushioned Ride SHOCK ABSORBERS

are now available to American car owners for an entirely new concept in quality riding—safest comfort and smoothest performance at all speeds.

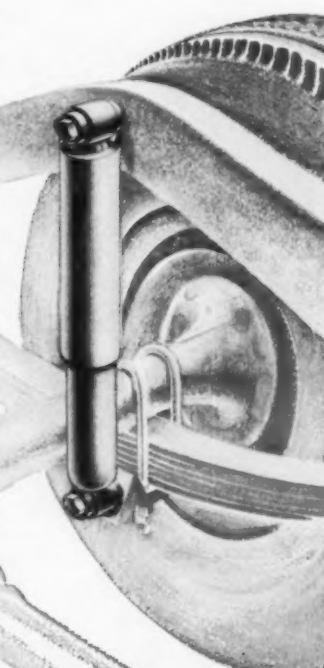
AUTOMATIC COOLING, created by the exclusive circulating oil design, makes the big difference between an ordinary ride and the **ARMSTRONG** ride . . . another reason why **ARMSTRONG** is standard equipment on 80% of British built cars, and Continental cars too.

Remember, all shocks are not the same, some run hot and cause oil to thin out for decreased shock action at high speeds and on rough roads. But with Armstrong Cushioned Ride Shocks, less heat builds up—oil maintains its body and you get automatic cooling with a shock action that is steady at all loads, roads and speeds.

So sell "the ride of your life," sell the quality shock absorber—**ARMSTRONG**. Millions in service. No more in price. Armstrong offers the most complete line of shock absorbers in the world—chosen as original equipment by more automobile makers than any other.

Armstrong offers dealers a totally new product, an exclusive new "Double Action" Design, for greater-replacement sales.

Armstrong offers jobbers greater sales and profits with the world's most complete line. American, British, European cars, trucks, buses and motorcycles . . . plus a **QUALITY** never before seen in this country.



202-A

Write for complete details on this outstanding shock absorber at a competitive price for greater demand—greater profits for you.



ARMSTRONG HYDRAULICS, INC.

566 E. ILLINOIS ST., CHICAGO 11, ILL.

b) picking up and delivering cars to the customer's home or business.

c) giving rides to the station for busy commuters.

d) being especially careful to cater to and be courteous to women. (Paul Hill says "If I can sell the woman in the family, the man will go along about who fixes the car".) To all customers exhibit the attitude of a cheerful nature. Make him feel that his car will always be fixed properly and at the right price.

e) speed of repairs—the ability to produce good mechanical work under impossible time requests: "My wife must have the car by 11 o'clock this morning".

4. Training of own mechanics a continuing process. (Pete Hill points out that their men move up from the lubrication lift right on through the shop.)

5. Paying mechanics good wages and treating them right. Turnover simply isn't a paying proposition in employee relations.

6. Utilization of all of the latest instruments, tools, and equipment that will do a job better. Save manpower and muscles, and save time. (Hill Brothers equipment includes a cylinder boring machine, a brake drum lathe, front-end alignment equipment, a headlight aimer, and special carburetor tools and instruments. Also equipment to service automatic transmissions.)

7. Providing large, uncluttered working areas.

8. Keeping up-to-date with the latest automatic devices now prevalent in today's new cars.

9. Making sure to stock an adequate supply of spare parts and accessories.

10. Buy supplies in quantity to effect savings.

Hill's Auto Service is one of about 150 general repair shops and car dealerships in the city of Mount Vernon. As already noted, annual volume for the
(Continued on page 112)

Service Suggestions . . . Continued from page 62

Polarizing Generator With The Regulator

Sometimes voltage regulator points will oscillate and click even though generator is correctly polarized.

If you run into a condition like this on 1953 Pontiacs and earlier models, install a ground strap between the rear of the cylinder head and the firewall to provide a good ground between the generator and the regulator. On some models the cars came through with this cable. In this case the connection should be checked for tightness.

Passenger Car Wheel Balancing

The optional installations of Level Air Suspension and Positraction Rear Axle have raised questions regarding wheel balancing. Chevrolet, in cooperation with various balancing equipment manufacturers, suggests the following procedures. The procedure for on-the-car balancing for front wheels on either standard coil or Level Air Suspension is not changed from the standard procedure as used previously and recommended by the various equipment manufacturers.

The recommendation for balancing rear wheels on vehicles equipped with Positraction is to remove the wheels from the vehicle and balance them on off-the-car balancing equipment. While on-the-car balancing can be accomplished in most instances, the possibility of the Positraction unit locking-up and driving the vehicle off the jacks makes such a procedure extremely dangerous.

Where off the wheel balancers are not available, the rear wheels

may be removed and installed on the front, for balancing with available on the car balancers.

NOTE: All recommendations and warnings given in this article, relative to balancing wheels on Chevrolet vehicles equipped with Positraction Rear Axle, are also applicable in case where any tire tread modification is to be performed that involves spin-

ning the vehicle wheels.

The procedure for balancing rear wheels on vehicles without Positraction and with or without Level-Air Suspension is as follows:

1. Raise the wheel to be balanced approximately 1" off the floor by jacking beneath the frame on the flat portion behind the frame kick-up.
 2. Place wheel chock on front
- (Continued on page 107)

you can BANK on-



Yes, you can bank on Johnson Tappets for ready-made profits. Johnson, as an exclusive tappet manufacturer, has the only complete line of tappets, giving you coverage in both mechanical and hydraulic tappets. The popular Adjustable Tappet for Ford V-8 L-Head engines has been a steady money-maker for many repair shops, and will continue to be for many years to come. Johnson Hydraulic Tappets are filling the needs of a growing market as more and more new cars are being built with hydraulic tappets.

Finally, you can bank on the customer acceptance which Johnson quality has always assured. Johnson Tappets are made under the most effective quality control known. You build a reputation for such high quality when you specify and sell Johnson Tappets—Hydraulic, Adjustable and Mechanical.

"Tappets are our business"

JOHNSON PRODUCTS

INC.
MUSKEGON, MICHIGAN

EASY EXTRA MONEY THIS EASY WAY.....

STOP WATCH PROVES



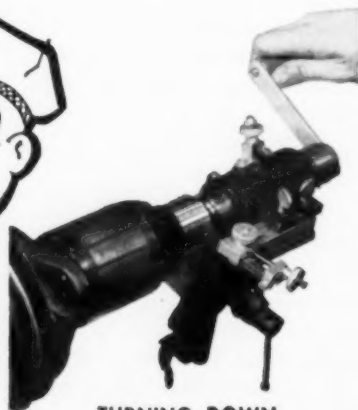
*You can Renew a generator
in 12 minutes, 35 seconds*

with **NEW, IMPROVED, PORTABLE ARMATURE CONDITIONING "TWINs"** . . . and they pay for themselves fast with a few rebuild or replacement jobs in a few hours! Even with no experience *you* can do a complete job of generator rebuilding in *less than 15 minutes*, without hurrying . . . with *factory-new accuracy guaranteed*.



Say, Eddie, our new portable ARMA-TWIN turner and undercutter has paid for itself several times in the two weeks we've had it. Fast, too . . . I just had a generator apart and reconditioned it good-as-new in under 15 minutes!

Some combination, Bob! So easy and simple, too . . . no pulley problem, nor belts to slip or break. No end plates to remove either. That's one less pain in the neck, the way steel bends and cast iron snaps. And a real space saver, so lightweight and easy to hang up out of the way!



TURNING DOWN

HERE'S HOW the Speedy-Sure Arma-Twins can work for you *two ways*: You can keep ready-to-install rebuilds on hand, and charge top replacement prices, even though they took you less than 15 minutes apiece to put in A-1 condition in your spare time . . . OR . . . you can keep from losing those "drive-aways" by offering guaranteed replacement while they wait, or repair theirs and make it a simple service job. Either way, there's big profit in it for you!

ONLY 7 EASY STEPS (Operations and time of each)

<p>1 TAKE APART AND WASH 160 SECS.</p>	<p>2 SET UP AND TURN DOWN 130 SECS.</p>	<p>3 SET UP AND UNDERCUT 140 SECS.</p>	<p>4 TEST 20 SECS.</p>
<p>5 PAINT 40 SECS.</p>	<p>6 REASSEMBLE 330 SECS.</p>	<p>7 ADD BRUSHES 35 SECS.</p>	<p><i>factory-new accuracy</i> in 12 min. 35 secs.</p>



UNDERCUTTING

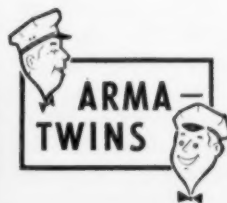
President
Baintree Tool Co., Inc.
121 Hancock St., South Baintree, Mass.

ARMA-TWINS look good to me. Please rush prices and FREE details.

NAME _____
ADDRESS _____
CITY _____ STATE _____

FOR EASY MONEY FAST MAIL THIS COUPON TODAY

Baintree Tool Company, Inc.
121 Hancock St., South Baintree, Mass.



shop kinks

Time and work saving ideas on cars and trucks can pay off. Send Yours In Now!

\$25

FOR THE KINK
OF THE MONTH

\$7.50

PAID FOR
EACH KINK

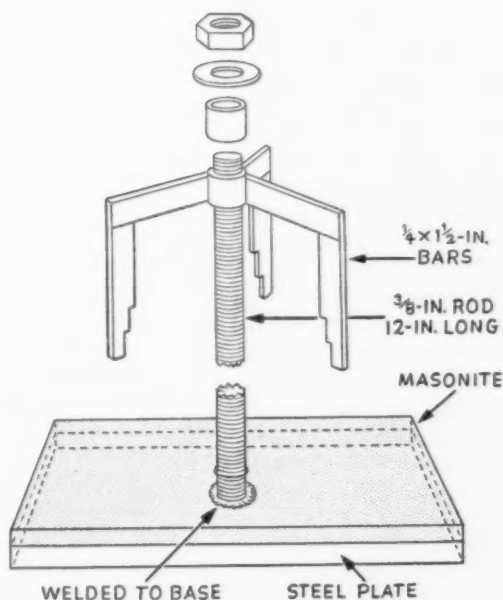
Time-saver For Removing Valve Lifters On Edsels

I have cut the time of replacing valve lifters on the Edsel, by using a magnetic pick-up tool. First determine the noisy ones. Remove the rocker arm assembly. Push rods and then fish them out. With the tool and a stiff rod or screwdriver they can be removed and replaced in a few minutes. *Edwin Mattson, Rt. 3, Box 8, Alexandria, Minn.*

Rubber Dust Caps Used For Gas Line Stoppers

I have found that rubber dust caps that come with new or rebuilt master cylinders work well as stoppers for gas or brake lines which have been disconnected. They can be either placed in the line or over it, depending on the size of the line. *A. A. Nickos, Avenue Auto Repair Shop, 2780 San Bruno Ave., San Francisco 24, Calif.*

Easy-To-Make Press For Replacing Clutches



The press, prepared as shown in the drawing will remove most, if not all clutch piston return spring retainers used in automatic transmissions. This includes the flat Fordomatic disc spring. By inverting the spider, hydramatic clutch drum snap rings can be removed. The spider used with a long battery holddown bolt and a couple of washers will remove the hydramatic reverse piston retainer. An impact wrench and a deep socket make it a "power tool." *George LeGrow RD 2, Owego, N.Y.*

(Continued on page 101)

New Products Continued from page 70

Foreign Cars on Frame-Kontakt Hoists," is available. The timely manual offers instructions for spotting and positioning small cars on H-shaped frame-engaging lifts; also pictures of vehicles approaching the hoist whose adapters are swiveled to contact position. Other photos show vehicle on the hoist. Diagrams illustrate wheel spotting.

339. Coated Body File

Behr-Manning Co., Div. of Norton Company: A coated, abrasive body file is offered to hasten plastic filler sanding. Named "Adalox Body File," it holds a 2¾ by 17½-in. sheet of 40-D aluminum oxide abrasive paper. The paper is secured with clips at each end. The device fits standard body file holders or handles. The company claims it provides substantial cost reduction. Also will not gouge, quickly reduces rises and waves to the required surface. The filler, it is said, can be sanded without extreme loading—even when it has hardened.

340. 3-Action Cleaner

Gumout Div., Pennsylvania Refining Company: A triple-action parts cleaner has been developed. Named S-P-D, it combines solvent, penetrant and detergent action. The company claims it is without offensive odor. Other claims describe its long life, and hydro-seal layer to prevent evaporation. It reportedly will not rust, corrode or leak. Also non-explosive and non-inflammable.

341. Steam Cleaners

John Bean Div., Food Machinery & Chemical Corp.: Improved design has made its steam cleaner line easier and faster to operate. The company offers a variety of models. Cleaners are available as stationary or port-

able units. They're designed for garages, service stations, fleet operations, industrial plants. The units convert 100 gallons of cold water into steam. A special detergent compound is vaporized with high-pressure steam. The cleaner works two minutes after switch has been thrown. The company's Bulldon pump supplies balanced amounts of water and fuel.

342. Shop Welder

Hobart Bros. Company: An AC transformer-type arc welder is offered to auto body, garage and service station shops. Its price is modest. Name: "Hustler." It is designed for welding, cutting, hole-burning, hardsurfacing, soldering, brazing and heating metal. Rated at 180 amps at 25 volts on 20 per cent duty cycle. Operating voltage is 230 single phase, 60 cycles. A tap is provided for operating on low 208 line voltage. Selecting welding and cutting current is achieved by plugging electrode cable into one of nine receptacles. These are arranged in a circle on the output panel. The ground cable plugs into one of two receptacles in the panel's center. This provides a high or low range of welding current.

343. Versatile Primer

Krylon, Inc.: A gray all-purpose primer spray is available in an aerosol container. The company claims it provides an excellent bond on nearly all surfaces. It requires several minutes to dry. Continuous shaking before using is unnecessary. This is due to a special formulation that prevents the Primer from settling hard in the container. It prepares bare wood, metal, plastic, ceramic surfaces. . . . Especially appeals to hot rod enthusiasts because of its gray color.



Cavorting in delightful sunshine of balmy Nassau-in-the-Bahamas, three presidents pause during NAPA spring meeting to enjoy a Volkswagen. Left to right: Jack Echlin, Echlin Mfg. Co; Fritz Rohrer, NAPA Pittsburgh Warehouse; George Johnson, Balkamp Inc.

Standard Motor Shifts Personnel

Standard Motor Products, Inc., Long Island City, N. Y., has announced shifting of personnel to other sections of the country.

Charlie Webb, former district manager in Oklahoma, to Northern California; Cliff Bradshaw, former Memphis area district manager, to Oklahoma; Clay Currey, former assistant district manager of Eastern Tennessee and Eastern Kentucky, to district manager in Memphis; field representative Bob Copeland to assistant district manager of Florida and South Georgia.



Dolly Built For Removing Dual Wheels

I built a dolly for removing dual wheels. It is simple to build and very inexpensive. It is built from $\frac{3}{4}$ inch iron pipe, welded together. It has four used generator bearings as wheels. They are fastened on with four $1\frac{1}{8}$ inch bolts. Then they are stuck into the pipe and welded. *Edward Ondrias, John L. Russell Chevrolet, 117 Betty St., El Campo, Texas.*

Method For Installing Needle Bearings

When working on units that employ needle bearings, such as the rear servo actuating arm in the later Fordomatic and Mercomatic automatic transmissions, place the needle bearings in their place. Put the thumbs from each hand on each end of the needles and twist. By doing this, the needles will stay in place firmly until the shaft is inserted, at which time they will straighten out again as the shaft is installed. *John H. Breuker, Box 485, Worthington, Minn.*

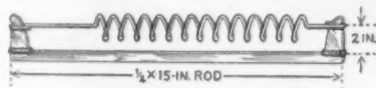
Tool To Turn Crank Shaft on Chevrolet

I made a handy tool to turn the crankshaft on a Chevrolet when the lower fan pulley is re-

lower pulley is removed. I removed the hub from an old Chevrolet fiber camshaft gear. Then I filed the keyway a little wider so it would be a free fit on the key that is in the front of the crankshaft. I took a two inch washer and welded through the hole in the washer to a long nut such as is used on the rear spring U bolt on a truck. I then welded the rim or outside of the washer to the flange of the timing gear hub and ground the weld smooth so it was a neat appearing tool. It will slip on the end of the crankshaft easily. Then the shaft can be turned with any type of wrench. *Basil Girton, Super Chevrolet Co., Platte, So. Dakota.*

Extra Spring Holds Hood In Position

On Pontiac and Chevrolet hoods a lot of the springs are too

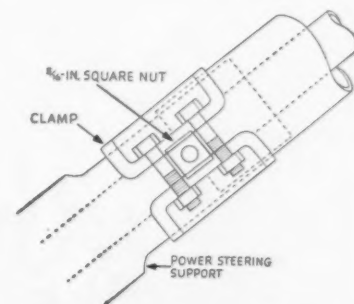


weak to hold the hood up. We make a quick and easy repair by using a clutch pedal spring or similar smaller coil spring thru the center of the hood springs.

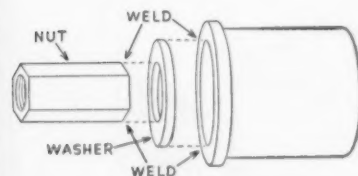
These can be installed and hooked without unhooking the large hood springs and give enough added strength to support hood. *H. Griffy, Griffy's Sinclair Service, 41st & Santa Fe, Oklahoma City, Okla.*

Steering Has Clattering Noise On Rough Roads

We have found on some 1958 DeSotos, with constant control



power steering that the jacket on the steering shaft is too large for the support on top of the unit to tighten down. This causes a clattering noise when driving over a rough road. We use a $\frac{5}{16}$ in. cap screw into the square nut. The clamp holds the square nut and the cap screw tightens the jacket to the unit as a set screw. By doing this you won't have to pull the steering wheel and slide the jacket up to install a shim or spacer. *James Slougher, Lake Village Motors, Lake Village, Arkansas.*



moved and you are trying to get the timing marks lined up when putting in timing gears. It can be used at any time you need to turn the crankshaft when the

If you have an original idea for a special tool, a short cut on any job or any trick of value to others, write it down and if necessary make a rough sketch. Just make it clear. Send it to Motor Age. If your Kink is used it may bring you \$7.50 or \$25. All entries become the property of the Chilton Company. Because of the quantity of entries sent in, none can be returned.

Talk Tune-up Continued from page 43

feel better. Because they have taken a look at what's going on."

Extra business grows out of this personal contact. For example, Johnston observed that "three customers had their wheels balanced one time just because they saw another customer getting this work done on his car."

Johnston figures that customer labor sales at Darby Buick have moved up more than 21 per cent this year. Parts sales are up too. Close to 18 per cent.

New Jersey Agrees Too

Over in Camden, New Jersey, you will not get an argument from George Shatz on the value

of "letting the mechanic do the selling." Owner of "George's Auto Service," Shatz notes that his sales volume is up 20 per cent through letting the customers browse around.

Shatz stresses that the mechanic must be alerted to other service sales opportunities around the car on which he is working. And when the customer is there, point them out.

The mechanic's recommendation carries a great deal of weight. To the motorist, he's a "distinterested party." At George's location, a daily and monthly bonus plan was introduced to stimulate service sales. Paying them daily keeps them in lunch money and pocket cash. The monthly bonus comes in handy just about the time they can use the extra cash.

The employee length of service at Shatz' is quite high. Key men have been there 15 years or longer and the average is between seven to 10 years of service.

Weekly, George's Auto Service announces to the employee staff that two to five items are on the daily incentive plan. It may be a tune-up, or a muffler installation. Or installation of an oil filter. Whatever the items designated for promotion that week, they are firmly fixed in the mechanics' minds.

The resulting increase in volume bears this out quite well!



**YOUR
CONFIDENCE
Is What
We're After!**

That's why we make P & D Ignition Parts the best on the market. It's why we select our raw materials with care, engineer them for top performance, and give them a triple inspection before shipping. We call the result Quality Controlled. You'll call it just what you hoped some manufacturer would have the foresight to give you, to help build customer satisfaction and profits.



MANUFACTURING CO., INC.

Established 1920

19-02 Steinway St., Long Island City 5, N.Y.

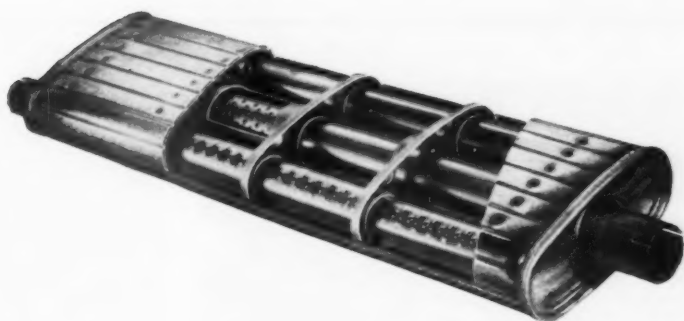
Export Sales: Borg Warner International, 36 So. Wabash Ave., Chicago 3, Ill.



There are just 3 ways to combat corrosion . . .

to make longer lasting mufflers . . .

ONLY AP



**GIVES YOU
ALL THREE!**

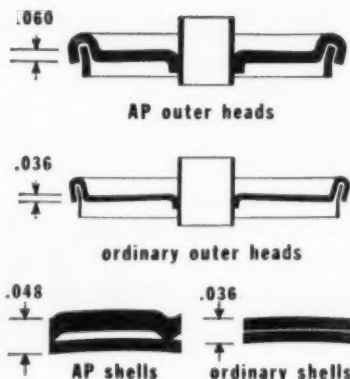
Now on 8 out of every 10 units produced! Here they are!

Only AP has all three

THICKER STEELS

1

It obviously takes longer for rust to eat through steel that is thicker. For years AP mufflers have had up to $\frac{1}{3}$ thicker shells than any other leading brand. This gives them $\frac{1}{3}$ more resistance to the metal-eating acids produced by today's big engines, new fuels. It also means that they can take a greater beating from impact with potholes, curbs and other objects. And they have up to $\frac{2}{3}$ thicker steel in outer heads for greater resistance to rustout and blowout.



"DRI-FLOW DESIGN"

2

Thicker steels are part of the answer to the corrosion problem. But AP goes a step farther by fighting internal corrosion with revolutionary "Dri-Flow" Design. This helps prevent internal rustout by evenly distributing the flow of hot gases—holding condensation to a minimum. The moderate, uniform heat flowing throughout the muffler keeps acid moving harmlessly out the tailpipe as a vapor, instead of cooling and condensing inside the muffler. "Dri-Flow" gives these heavier, long-lived mufflers *even longer life*.

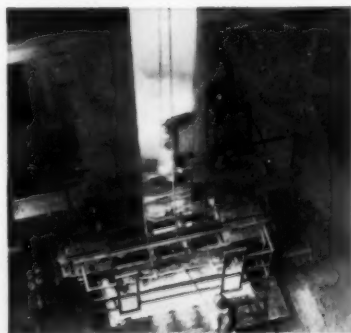


Almost perfectly dry after a 10-minute test on a dynamometer because of even heat distribution. Drying action minimizes internal corrosion.

COATED STEELS

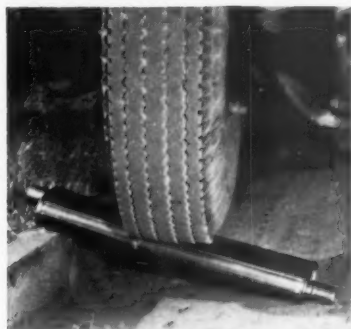
3

Thicker steels, plus "Dri-Flow" Design, put up a terrific fight against corrosion and by themselves make AP last longer than ordinary mufflers. But AP also provides premium coated steels to help win this battle. Such coated steels have played an important part in AP quality design for almost 20 years. Now, for *plus* protection, AP reaffirms its traditional quality leadership by adding premium coated steel to *every muffler for 1955 through 1959 model cars, as well as many older models*. This brings the total number of AP mufflers featuring premium coated, corrosion-resistant steels to 163—twice as many as in any competitive line!



AP thicker steel is coated on both sides with molten aluminum or zinc to give maximum resistance to corrosion.

features that mean longer life



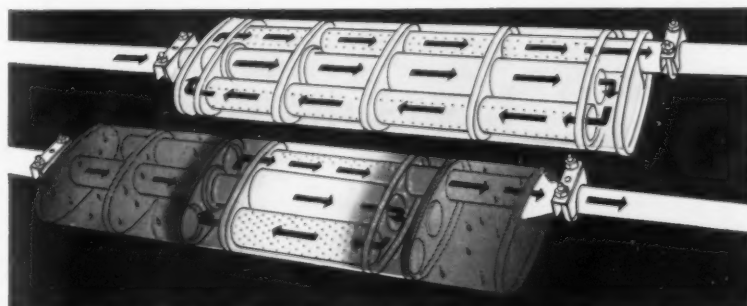
Extra ruggedness—AP's stronger construction, inside and out, lets it take the weight of this 5-ton trailer with practically no damage to the shell.

AP muffler number	AP weight	mfr. B weight	mfr. C weight	mfr. D weight	% AP is heavier
504	17½ lb.	15¼ lb.	14¼ lb.	16¼ lb.	AP up to 19% heavier
467	17¼ lb.	11¼ lb.	12 lb.	12 lb.	AP up to 48% heavier
401	14¼ lb.	10¼ lb.	10¼ lb.	11¼ lb.	AP up to 40% heavier
479	15¼ lb.	12¼ lb.	11 lb.	13 lb.	AP up to 42% heavier
411	8¼ lb.	6¼ lb.	8 lb.	8¼ lb.	AP up to 35% heavier

Five typical popular numbers show AP's heavier weight. Weight is not by itself a guarantee of muffler quality. But with AP, this weight (given above without cartons) means *thicker* steels that resist corrosion much longer.



Filled with corrosive moisture after same test because of hot-spot, cold-spot design of this ordinary muffler. Often a quart can collect, speeding rustout.



"Dri-Flow" Design (top) sends the hot exhaust gases into every part of the muffler. There are no cold spots to collect metal-eating moisture and cause rustout. Ordinary mufflers (bottom) choke off gas flow from "cold" chambers, causing condensation and premature failure.

Plain facts about muffler life

Corrosion is the biggest enemy of mufflers. And there are just three ways to beat this enemy: (1) use thicker steels; (2) design the muffler so that it stays drier inside, reducing metal-eating condensation to a minimum; and (3) use coated, corrosion-resistant steels. *Only AP gives you all three!* Today 8 out of every 10 units produced by AP have these quality features that mean longer muffler life. More than

ever, AP mufflers outlast, outperform, all others.

A premium muffler at regular price!

In spite of the fact that AP is the quality leader, *you and your customers pay no more for AP mufflers!* With this superb product that is priced right, the proved AP Muffler Specialist Program, and national consumer advertising, you can't miss. Dealers make over \$2715 per year on muffler installations . . . get on the AP bandwagon today!

THE AP PARTS CORPORATION
 3T AP Building, Toledo 1, Ohio • Exhaust systems for better motoring

Speed Truck Tire Changes

WITH
**JOB-DESIGNED
KEN-TOOLS**

EASIER... QUICKER

Quality tools for trucks, buses, farm tractors, and aircraft. Hand forged from chrome nickel alloy steel. Tougher, last much longer!



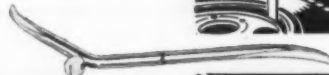
T-19 24" Truck and Bus Straight Spoon



T-20 24" Truck and Bus Curved Spoon



T-29
18" Tool for starting first
bead down over rim



T-48A
40" Tool for removing and
replacing lock rings



**JOB-DESIGNED
KEN-TOOL**

LOCK RING REMOVERS
stand up under tremendous leverage



T-23 24" For Firestone RD, R-1 Rim



T-25
New 18" Ring Remover for 5° Firestone Rims



T-22 18" Combination Lock Ring Tool



T-27 18" Ring Tool for R-1 Rims

SEE YOUR JOBBER on the complete line of Job-Designed Ken-Tools. Forged by the largest exclusive manufacturer of top-quality Tire-changing Tools and Equipment. THE KEN-TOOL MFG. CO., AKRON 5, OHIO.



Leaving Idlewild Airport recently for European tour are, from left: Victor Hann, R. G. Rabuck, Walter Tunnessen, Art Berry, George Thornton, R. A. Harp, and David Weiss.

Automotive Group Tours Europe

A handful of Philadelphia automotive men joined some 50 Quaker City businessmen recently on a six-country European tour.

At the Brussels World's Fair they found no American automotive exhibit. In contrast, automotive displays were seen at the nearby Russian pavillion. Equally surprising was a total lack of automotive manufacturing throughout Belgium.

Many businessmen seized the opportunity to visit European accounts. Automotive members, for their part, visited both factories and supply houses. Also compared automotive parts distribution with U.S. practices.

R. A. Harp, president of Auto Equipment and Service Company, Inc., presented Paris officials with Philadelphia's city seal, flag, and picture of Independence Hall.

Champion Repeats Engine Education

Last year over 24,000 mechanics and vocational students witnessed the Champion Spark Plug Company's "Service Tips" engine demonstration. Directed by George M. Galster, Champion's service manager, the pro-

gram is again offered to automotive repairmen, fleet operators, educational institutions, automotive societies, and car and tractor dealers.

Seven Champion service engineers, using single cylinder test engines, demonstrate the effects of operating conditions and engine adjustments on power output and spark plug performance. Overhead projectors and engine meters allow sizable audiences to visualize via large screens the instant effects of even the smallest engine adjustments.

Continental Sales Nearing Record

Six month sales of the Continental Mark III are rapidly overtaking the mark for all previous Continental series, begun in 1939.

Ford Motor Co. reports 7,046 units have sold since their November introduction. This is twice the 3,000 Mark II's sold over a period of 18 months. Sales of original Lincoln Continentals, produced from 1939 through 1948 excluding war years, number 5,322.

Ford attributes one reason for the recent sales burst to the full line of models offered. Four-door hardtop and convertible units account for more than half of the sales.

Hydramatic Adjustment

In response to several inquiries for more detailed description on internal adjustments on Hydramatic transmissions; here is a run-down of this type of adjustment.

Internal Adjustment: Drain the oil and remove the oil pan.

Remove the oil screen and any pipes that interfere with the adjustment. Loosen the front band adjusting screw locknut. Back off the front band adjusting screw about 10 turns.

Remove the pipe plug from the front servo using a $\frac{7}{16}$ ths six point socket. Loosen the hex adjusting screw at the front servo gauge until about $\frac{1}{8}$ inch of its threads show and the stem has been drawn into the gauge body. Screw the gauge into the front servo body and snugly hand tighten it. Back off the hex adjusting screw on the gauge a full six turns and remove the gauge

**Be fair with yourself
and you'll admit you are
often wrong.**

Service Suggestions . .

Continued from page 97

side of opposite wheel.

NOTE: It will be necessary to use special wheel chock when balancing wheels on air suspension equipped vehicles.

3. Spin rear wheel being balanced using car engine, to obtain desired wheel vibration.

NOTE: It is not necessary to close the manual shut-off valve to perform this operation on air suspension jobs.

4. Follow the equipment manufacturers recommendations as to wheel speed and equipment use.

from the servo body. Inspect the oil screen and pipes and clean and replace if necessary. Clean the bottom of the oil pan and re-install it with a new gasket. Add oil and you are in business.

Rear Band Adjustments

The rear reverse band adjusting screw is in the bottom right

rear corner of the case. It is part of the rear servo linkage. Drain the transmission and remove the oil pan. Loosen the band adjusting screw lock nut and tighten the adjusting screw clockwise to $1\frac{3}{4}$ -2 ft. lbs. (20 to 25 inch lbs.). Now back the screw out ten complete turns, hold the screw and tighten the lock nut to 30 to 35 ft. lbs. Replace the transmission oil pan and refill the transmission to its proper level.

Introducing

PURITAN

Heavy Duty
Brake Fluid

New Puritan Heavy Duty Brake Fluid is the economical answer to today's high temperature requirements. Contains Puritan's traditional quality ingredients that assure trouble-free, heavy duty performance. Order Puritan Heavy Duty Brake Fluid through your NAPA jobber today!

**Puritan
Super 60**



The finest brake fluid available . . . meets or exceeds SAE Specifications 70R3 and 70R1.

Meets or exceeds
SAE Specification
70R1

HEAT RESISTANCE exceeds
SAE Specification 70R1

RUST RESISTANCE exceeds
SAE Specification 70R1

VISCOSITY exceeds SAE
Specification 70R1

STABILITY exceeds SAE
Specification 70R1

COMPATIBILITY meets
SAE Specification 70R1

OLIN MATHIESON CHEMICAL CORPORATION
Automotive Products Department • Baltimore 3, Maryland

Ignition timing Continued from page 57

POWER. To be sure, a high anti-knock gasoline means that an engine can develop more power if properly adjusted, and if operating under favorable conditions, but anti-knock itself must not be confused with power. High anti-knock gasolines permit more power, but are not "hotter"—they do not "burn engines."

Of course, you do not have to go up a mountain to get a change in outside air pressure. On an "average" day, the pressure of the air at sea-level is equal to 14.7 pounds to the square inch. The pressure increases in fair weather and decreases in foul.

If you adjusted an engine by trace knock on a day with low pressure, there is no problem on that day. A rise in pressure, however, acts like a supercharger and the engine develops loud and oftentimes damaging knock.

The temperature of the outside air affects the cooling system of the engine. The higher the outside temperature, the less efficiently the cooling system works, so that the temperature in the engine becomes critical and the likelihood of knock becomes greater. For every 10 degree rise in outside temperature, the cooling system becomes less effective so that the car needs *1.5 octane numbers more.*

The moisture in the air works in two ways. First, the moisture itself for reasons that are not clearly understood acts as an anti-knock agent. (Water would be added to gasoline if only one could meter the proper amount of it. In fact, water is used by some airplanes on take-off.) Second, the moisture in the air tends to make the engine cool. As a result, every 10 per cent drop in humidity, the engine needs 1 octane number.

humidity rarely change one item at a time, except in the laboratory. Together they can have a total effect greater than the isolated figures we have given as examples, particularly on cars that are highly sensitive. The sensitivity of engines can vary greatly, even within the same make and model.

If you adjust the timing of a car at 60 F, with 85 humidity at low outside air pressure, you will have the most favorable conditions for the engine. If the temperature rises to 90, with a drop in humidity and a rising outside air pressure, you will have highly unfavorable conditions.

The combined effect of these changes can amount to as much as 15 octane numbers.



PART-TIME BRAKES cause FULL-TIME TROUBLE

Get full details and prices—Call your World Bestos Distributor

WORLD

The Total Effect

Pressure, temperature and

The weather influences knock by changing the conditions under which a gasoline is used. Gasoline itself, strictly speaking, is not a fuel.

Put a match into liquid gasoline (that does not have a surrounding vapor) and the match will go out. The engine must transform the gasoline into a fuel—into a vapor or into an atomized state.

Many parts of the engine, as

well as the weather, affect this "translation" of gasoline into a fuel. If an engine knocks, there may be a high jacket temperature, a low level of coolant, the wrong thermostat, a loose fan belt, a collapsed hose, bugs in the radiator, permanent anti-freeze in summer, a worn water pump, scale or rust in the block, deposits in the combustion chamber, a lean mixture, low float in the carburetor, wrong

or clogged jets, wrong spark plug, broken porcelain, or carbon in the threads of the spark plugs—to name only some causes that influence the operating temperature of an engine.

The working of an engine influence knock, and so does the design. A lowering of anti-knock needs of an engine by design is called "mechanical" octane numbers; an improvement in the quality of gasoline is usually registered by increased gasoline octane numbers.

Octane numbers tell us how well a sample gasoline will resist knock when compared, in the laboratory, to a gasoline of known resistance to knock or octane number.

A high octane numbers of gasoline gives the engine a greater opportunity to change and to use the gasoline as a smoothly burning fuel.

Note the word "opportunity." A gasoline of low octane number has just as much energy as a gasoline of high octane number, but a high compression engine doesn't have the opportunity to use it. The energy of a low octane gasoline is simply wasted. The greater the anti-knock, the more efficiently an engine can work. The octane numbers are built into the fuel by the refiner to be transformed into smooth power by the designer and the service man.

At the present stage of the automotive and petroleum industries, engines are capable of being adjusted to appreciate 100 octane gasolines. Seven years ago, the average was about 90. Wasting fifteen octane numbers means that more than 7 years of progress are thrown away.

The proper adjustment of the timing has been established by the automobile producer. His studies take into account a variety of weather conditions, and so for best results:

Do not play by ear.

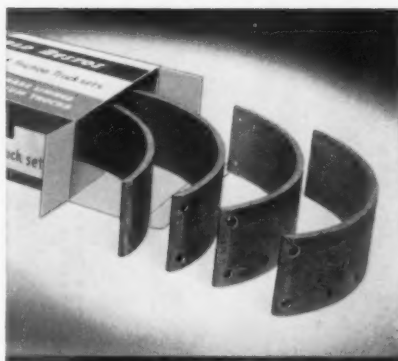
Follow the manufacturers' recommendations.

DON'T TAKE CHANCES...

Install WORLD BESTOS "PFT" (Prescribed Friction Truck) the brake lining sets built to develop maximum stopping power for light and medium trucks in hard-driving, multi-stop service.

Safety and dependability are the most important benefits you can give your customer. Build your reputation for guaranteed satisfaction! Give your customers the right combination of stopping power, fade control and long wear with WORLD BESTOS "PFT".

Get "PFT"—for trucks and buses—in Bonded Shoe Exchange Sets or in packaged segments for riveting or for bonding.



or write direct to WORLD BESTOS, NEW CASTLE, INDIANA

BESTOS

Mechanic tells jobber salesman why...

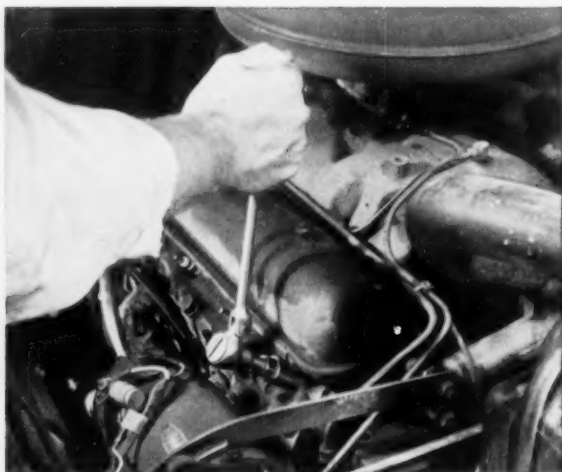
"I wouldn't give up my Champion



1. "My Plug-Master was only \$4.25 with an assortment of 50 Champion plugs," said the mechanic, "but I wouldn't sell it for \$100, if I couldn't replace it. The way this flex-handle bends back to clear obstacles makes this wrench the greatest spark plug tool I've ever seen!"



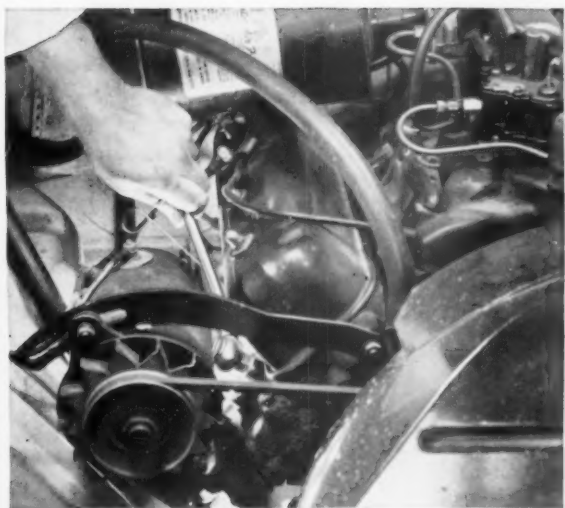
2. "Look at those knuckles! Not a new mark on 'em since I started working with my Plug-Master. Used to be always banging and burning them when I had to work down inside. But no more. The Plug-Master is a knuckle's best friend!"



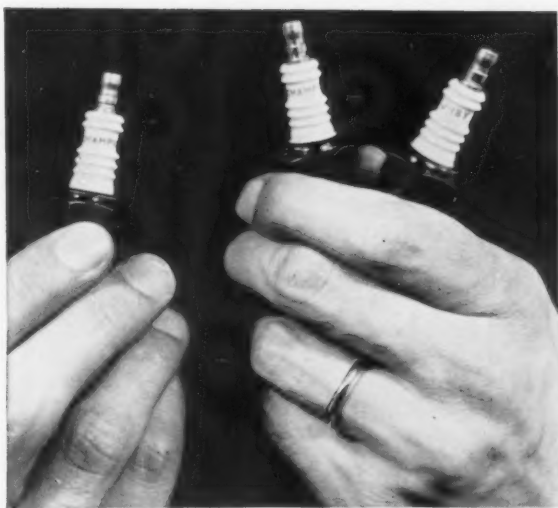
3. "With my Champion Plug-Master I can work out in the open. See how this flex-handle bends back to clear the valve cover on this job so I can keep my hands up here without worrying about what happens when I free a stubborn plug. But that's not all."

World's favorite spark plug—engineered for every car built by Ford, General Motors, Chrysler, American Motors, Studebaker-Packard, and every major foreign maker.

Plug-Master wrench for 100 bucks"



4. "You mean there's more?" asked the salesman. "Sure. Like the time I save by not having to remove generators, filters and power equipment on most jobs. See how it gets at this plug buried behind the generator," explained the mechanic.



5. "It's like a '2 for 1' deal. I save so much time on some jobs that I can just about put in two Champion Spark Plugs in the time it used to take for one." "That's great for profits," said the salesman. "I'm going to sell *everyone* a Plug-Master assortment!"



6. "Start by selling the boss two more. Bill and Joe want their own Plug-Masters — and we can sure use more Champions. Do all your customers a favor," the mechanic suggested, "and sell them Plug-Master assortments — because Champion has the right tool and right plug for every car."

CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO

● The "Plug-Master" ratchet wrench is available from your wholesaler in any one of four assortments of 50 fast-moving Champion plug types. (One for the over-all car market, others specifically selected for Ford Motor Company, General Motors, or Chrysler Corporation cars.) Packaging in these assortments enables you to obtain this new wrench at the low price of \$4.25."

The "Plug-Master" has a hinge joint that permits 30° handle travel forward or backward. Full 12-tooth ratchet engagement. Only 6" handle travel required for next bite. Popular 3/8" square drive fits most spark plug sockets and extensions. Ratchet shift reverses easily — has positive-locking action.

*Suggested dealer price for wrench only. Assortment of 50 Champion plugs at regular dealer price. (Minimum dealer price established by Fair Trade Agreements in Fair Trade States.)

DEPENDABLE 5-RIB

CHAMPION

SPARK PLUGS





Dale E. Moorman, right, knows it pays to advertise in the Yellow Pages.

"We'd miss a lot of new and used-car buyers if it weren't for the Yellow Pages!"

says DALE E. MOORMAN,
MOORMAN BUICK, INC., Topeka, Kansas

"A Buick prospect, as a rule, has been pre-sold by Buick's national and local advertising. Our experience is that when he's ready to buy, he looks for a Buick dealer in the Yellow Pages. As far as I'm concerned, the Yellow Pages is an essential local advertising medium for the sale of cars and car service."

Turn more *pre-sold prospects* into *profits*! Advertise in the medium that can be found in the homes and offices of your best prospects—24 hours a day. For complete information on how the Yellow Pages can increase your sales, call your local telephone business office.

TOPEKA'S A BUICK TOWN



- SALES
- SERVICE
- PARTS
- BODY SHOP

DEAL
CE 5-5355

MOORMAN BUICK, Inc.

TOPEKA'S FAVORITE DEALER
Used Buick and Buick

BUICK AUTHORIZED SALES & SERVICE

WHEN BETTER AUTOMOBILES
ARE BUILT
BUICK WILL BUILD THEM.

"WHERE TO BUY IT"
DEALER

MOORMAN BUICK INC 301 W 6th CE 5-5355
If no answer call CE 3-9522

**BETTER BUY
USED CARS**
• 527 HARRISON
CE 4-5547
• 1929 TOPEKA
CE 3-3211

DISPLAY AD (Shown reduced) plus a bold-face listing under the Buick trade-mark and one under "Automobile Agencies—Used Cars" sells Moorman's Agency as Buick Headquarters to all Topeka.

Hill Brothers

Continued from page 96

brothers runs to about \$120,000. Monthly, of course, this breaks down to \$10,000 per month.

The staff today numbers 8 mechanics and Pete and Paul Hill. When they moved to their present location in 1937, the staff was composed of the brothers and two mechanics.

In 1954 (as mentioned earlier) they built their present buildings. Besides the 15 cars that can be accommodated for service, a parking lot in the rear can handle 25 cars. A big help in controlling the even flow of their large volume!

**Hardening of the heart
ages people more quickly
than hardening of the arteries.**

GM Engineers Test Compression

How much higher can engine compression ratios rise?

Answer, according to GM engineers Darl Caris and Edwin Nelson appeared to fix ceiling of 17 to 1 for present engines. They said this depends upon ability of petroleum industry to economically produce higher octane fuels. The figure does not apply to future engines.

Experiments Conducted

Caris and Nelson told an S.A.E. gathering at Atlantic City they had experimented with seven 324-cu in. modified production engines. Compression ratios ranged from 9 to 1, to 25 to 1. (Current ratios average 9.5 to 1). Higher octane experimental fuels were used to reach peak ratios.

Their findings showed that thermal efficiency leveled at 17 to 1. Higher ratios delayed combustion.

Calendar of Coming Events

Dealers Convention

Aug. 8-9—Montana Automobile Dealers Assn., East Glacier Hotel, Glacier Park, Mont.
 Aug. 10-12—Georgia Independent Automobile Dealers Assn., Bon Air Hotel, Augusta.
 Aug. 13-15—Automobile Dealers Assn. of West Virginia, Greenbrier Hotel, White Sulphur Springs.
 Aug. 17-18—Georgia Automobile Dealers Assn., General Oglethorpe Hotel, Savannah.
 Sept. 5-7—Maine Automobile Dealers Assn., Eastland Hotel, Portland.
 Sept. 7-9—Colorado Automobile Dealers Assn., Antlers Hotel, Colorado Springs.
 Sept. 7-9—Wyoming Automobile Dealers Assn., Lander, Wyoming.
 Sept. 8—New Hampshire Automobile Dealers Assn., Inc., Farragut House, Rye Beach, N. H.
 Sept. 8-9—Minnesota Automobile Dealers Assn., Leamington Hotel, Minneapolis.
 Sept. 14-16—Michigan Automobile Dealers Assn., Pantlind Hotel, Grand Rapids.
 Sept. 18-20—Arkansas Automobile Dealers Assn., Hotel Marion, Little Rock.
 Sept. 21-22—Kentucky Automobile Dealers Assn., Inc., Sheraton-Seelbach Hotel, Louisville.
 Sept. 21-23—Ohio Automobile Dealers Assn., The Neil House, Columbus.
 Sept. 21-23—New York State Automobile Dealers, Lake Placid Club, Lake Placid.
 Sept. 21-23—Automotive Trade Assn. of Virginia, Cavalier Hotel, Virginia Beach.
 Sept. 21-23—New York State Automobile Dealers, Inc. 35th Annual Convention, Lake Placid Club, Essex County, N.Y.
 Sept. 22-23—Wisconsin Automotive Trades Assn., Schroeder Hotel, Milwaukee.

Oct. 19-21—Florida Automobile Dealers Assn., Eden Roc Hotel, Miami Beach.

Nov. 8-10—Texas Independent Automobile Dealers Assn., Texas Hotel, Fort Worth.

Nov. 16-18—Mississippi Automobile Dealers Assn., Buena Vista Hotel, Biloxi.

Dec. 3—Utah Automobile Dealers Assn., Newhouse Hotel, Salt Lake City.

Dec. 9—Milwaukee County Automobile Dealers Assn., Milwaukee Athletic Club, Milwaukee.

Jan. 31-Feb. 4—National Automobile Dealers Assn., Chicago.

General

Aug. 11-14—1958 SAE National West Coast Meeting, The Ambassador, Los Angeles, California.

Aug. 13-17—Rod and Custom World's Fair, Industrial Arts Bldg., West Springfield, Mass.

Aug. 27-30—Automotive Parts Rebuilders Association convention and trade show, Conrad Hilton Hotel, Chicago.

Oct. 15-18—Automotive Wholesalers of Texas convention, Moody Civic Center, Galveston, Texas.

Oct. 20-22—1958 SAE National Transportation Meeting, Lord Baltimore Hotel, Baltimore, Maryland.

Oct. 27-28-29—New Jersey Automotive Trade Association, Chalfont-Haddon Hall—Atlantic City.

Nov. 12—Connecticut Automotive Trades Assn., Hotel Statler, Hartford.

Kentucky Group Names McGaw

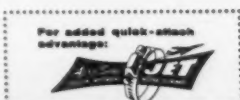
The Kentucky Automobile Dealers Association has announced the election of N. S. McGaw of Madisonville as president. Mr. McGaw, along with other newly elected officers of the KADA, will be installed during the Association's annual state convention in September.

Harry C. Holder, Sr., was chosen 1st vice president and W. E. Venters was named 2nd vice president. Other posts went to: Ben F. Long, treasurer; C. E. Brents, chairman of the board; and Lew Ullrich, managing director.



**Safest Thing
IN HOSE CLAMPS**

AERO-SEAL HOSE CLAMPS take mere seconds to install...and they're your safest bet for superior performance.
AERO-SEALS pioneered the precision worm gear that provides tighter seals... they refuse to let go under severest vibration.
Stainless steel band of 302-18-8 is stronger, more corrosion resistant, tightens with uniform pressure that will never pinch or cut hose.
AERO-SEALS can be used again and again, too! Available in a complete size range.
Demand the brand that means top quality and top profits...demand genuine AERO-SEALS.



BREEZE

Aero-Seal

REGULAR WORM GEAR HOSE CLAMPS

BREEZE CORPORATIONS INC. 700 LIBERTY AVENUE, UNION, NEW JERSEY

your business history should not be difficult. In small towns bankers sometimes know local businessmen so well they can fix their credit limits without seeing a loan application. But the larger the town or bigger the loan, the more details you will be expected to give, and this is where the banker may require com-

plete, accurate and dependable financial statements.

On a new loan you may be asked for statements covering past years as well as the current period. While most businessmen can provide a balance sheet of some sort, they are likely to have trouble when asked to supply income—or as they are some-

times called, profit and loss—statements. The balance sheet tells your banker approximately what your business is worth, your working capital position and so forth. Your income statement adds information about your sales, margin of profit, earnings and trend of your financial activities.

It goes without saying that providing authoritative financial statements and answering questions about them can prove difficult without professional accounting advice. Bankers are not impressed when businessmen give them information in round numbers or from memory. They want financial data in writing and in language they can understand—which means in accordance with accounting principles that other businessmen use and endorse.

That's where a certified public accountant comes in, and as one banker puts it: "A borrower can save a lot of time and get off on the right foot with us if he can refer us to his CPA."

For unsecured loans of \$10,000 or more the tendency in banking circles today is to require an audit by a CPA. Take your CPA with you when you go to the bank to discuss the loan. Then, if an audit is necessary, you, your banker and your CPA can agree on the information to be submitted.

Beware of attempting to restrict the scope of an audit. The audit is made so that the CPA can express an opinion on your financial statements. If you limit the extent of his investigation, he may be forced to disclaim an opinion on the fairness of your statements. Bankers prefer to receive "clean certificates," ones which the CPA has certified with no qualifications. In many cases he cannot do this unless he is permitted to observe inventories and confirm accounts receivable.

When a banker analyzes your financial statements, he is assess-

PROFIT FROM MOTORIST'S NO. 1 ENEMY

More than 13,000,000 road breakdowns were caused by battery or charging circuit failures in 1957. Regular testing will stop this terrible yearly waste of \$50,000,000. Regular testing will also give you a handsome profit in battery sales and charges.

Surveys show you will sell 1 battery and 4 charges every time you test 10 batteries. Fox Battery Servicing Equipment is the key to all these profits.

NEW! FOX CHARGERS AND TESTERS

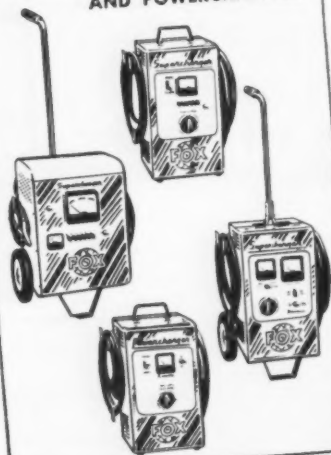
6-12v. OVERALL TESTERS



SUPERTESTER

MULTICHEK

SUPERCARGERS AND POWERCHARGERS



PULSE MAINTAINERS

FULL OF EXTRA FEATURES!

NEW, SPARKLING CHROME CASE FRONTS.
Give Fox equipment that "million dollar" look.

SILICON OR SELENIUM—5 YR. WARRANTY.
Your choice of rectifiers... both are fully protected and unconditionally guaranteed for 5 years.

6, 8, 12, 16 OR 24 VOLTS.
Charge anything that comes in: automotive, truck or highway equipment, bus, military or marine batteries. Today's special voltages will be standard tomorrow.

AUTOMATIC CUT-OFF.
All you have to do is connect to battery. Safetronic controls take over and automatically cut off when battery is fully charged. Electric timer cut-off models also available.

WARNING!

Beware of "bargain" charger claims. You can prove Fox superior charging ability by a simple test. Write us or your Fox Distributor for demonstration.

Write today for FREE "Get Your Battery Checked" SIGN and Profitable Hints on Battery Servicing. Fox Products Co., 4738 N. 18th St., Phila. 41, Pa.

FOX BATTERY SERVICING EQUIPMENT

ing your economic health. Here are some of the ratios or standards which he uses—and which you can calculate yourself—to determine your chances of getting a bank loan:

Current ratio—current assets divided by current liabilities; should usually be at least two-to-one, but special circumstances are sometimes considered.

Quick assets to current debt—cash, receivables and other ready cash items divided by current debt; one-to-one is the rule-of-thumb, but this too is flexible.

Debt to capital—money owed to creditors compared to owner's money in the business; the lower the ratio the better.

Fixed assets to capital—real estate, buildings, fixtures divided by net assets; ratio should be kept as low as possible to avoid

depleting working capital.

Inventory to working capital—shows percentage of working capital tied up in inventory; abnormally high ratio may result in shortage of liquid working capital to meet other expenses.

A seemingly unnecessary piece of advice to any borrower is to cooperate with his bank. Yet, many applicants will give information grudgingly or throw hurdles in the banker's way. There is no reason to withhold information on which the bank depends for a decision on your loan. At best, this attitude will only delay your loan; at worst, it will lose it altogether.

If you would like a brief summary of questions which bankers ask before granting a loan, you will find it in a short pamphlet, "Financial Statements for Bank Credit Purposes," published through the cooperation of the accounting and banking professions. Copies may be obtained by writing to The American Institute of Certified Public Accountants, 270 Madison Avenue, New York 16, N. Y.

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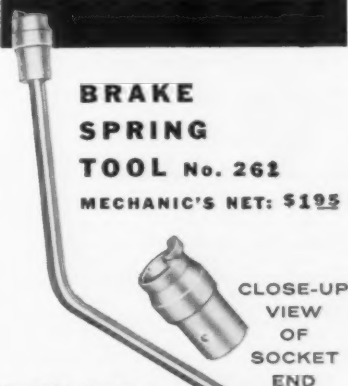


QUICK-CHECK GENERATOR METER HT-700

DEALER'S NET: \$4.95

The HT-700. A Quick-Check generator meter without leads or connections! Now you can make a quick check of the opening and closing amperage of the regulator cut-out and the regulated amperage from the generator. Just place the induction bar over the insulated wire from the generator and take a reading. It's easy to use—it's quick—and it's a sure way to increase flat rate profits!

BRAKE SPRING TOOL No. 261 MECHANIC'S NET: \$19.5



The 261. Beat the clock on brake relining and repair jobs with this new brake spring tool. Herbrand's latest Tool of the Month makes fast work of removing and replacing brake shoe return springs on all Bendix type brakes. Use socket end to remove the spring—use grooved end to slide it easily back in place. Cuts job time in half!

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BODY and FENDER REPAIR



"Now don't go trying to make a big project out of it."

"Yep, I had a beard like yours once, but when I realized how it made me look, I cut it off."

"Well, I had a face like yours once, and when I realized I couldn't cut it off, I grew a beard."



"I've got a body squeak in the car. See if you can put your finger on it."

"Last night I dreamed I was alone with Marilyn Monroe in a canoe."
"What a dream! How did it turn out?"
"Wonderful. I caught a ten-pound bass."

A man fell out of a tenth story window. He hit the sidewalk with a thud, got up, brushed himself off.

A witness rushed over and breathlessly asked, "What happened?"

The man gave the witness a puzzled look and exclaimed, "Don't know—just got here myself!"

The boss called the new stenographer into his office. "Miss Smith," he said, "You are the best looking girl we ever had working in this office." A pleased look came into the girl's eyes.

"You dress well," the boss continued, "you have a nice voice, you make a good impression on the public, and your deportment is fine."

"Oh, thank you," she said, "your compliments are very pleasing."

"Enjoy them to the fullest," returned the boss, "because we are now going to discuss your spelling, punctuation and typing."

A salesman, held up in a small Wyoming town by a bad snow storm, wired his firm: "Stranded here due to storm. Wire instructions."

Back came the reply: "Start vacation immediately."

The little boy was visiting a farm for the first time in his life. He was taken out to see the lambs and after much coaxing built up enough courage to pat one. He was delighted. "Why, Mom," he exclaimed, "they make them out of blankets."

"I never go riding with my boyfriend any more, because he sees spots before his eyes—lonely spots along the side of the road."

"Her husband was a judge, wasn't he?"
"We all thought so, until he married her!"



"What has he done now?"

College Boy: "But, Dad, I want to go where there's glamour, women, liquors . . . don't hold me back."

Father: "I'm not holding you back. Take me with you."



"Engineering forgot to provide a way for the driver to get in."



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Check the shocks on *every* car that goes up on your lift. Efficient shock absorbers are as important to safe driving as good brakes and steering. Monro-Matics, the only shocks with automatic adjustment for all roads, all loads, provide a smooth, cushioned ride, and stabilize the car, keep wheels from bouncing out of control, prevent accidents.



SHOCK ABSORBERS ARE A REALLY HOT ITEM!

Motorists are more safety conscious than ever. They welcome the suggestion to install new Monro-Matics when you show them the danger of riding on old worn shocks. Wide-awake dealers the country over are ringing up many thousands of dollars in Monro-Matic sales. The shock absorber business is big business.

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If your customer is not fully satisfied with Monro-Matics after 60 days' use, just re-install his worn shocks. Through your jobber, you receive—*free*—a new set of Monro-Matics to replace the ones returned by the customers.

GUARANTEED LABOR REFUND

If you ever need to re-install a customer's old shocks, after he's had the 60-Day Free Ride, we'll send you a \$4.00 labor adjustment. This Monroe policy protects your profits.

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